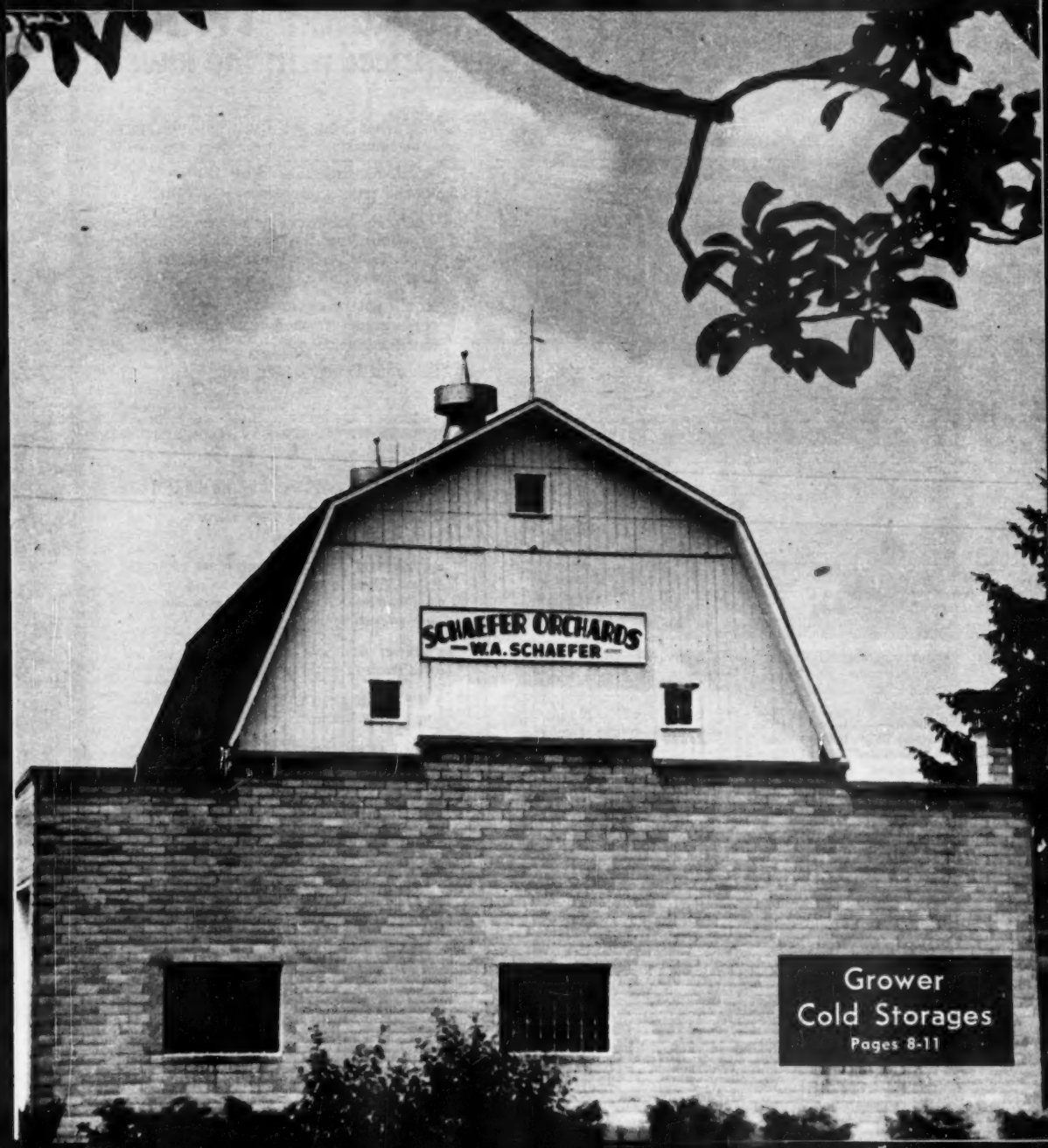
American
NOVEMBER • 1949

FRUIT GROWER



Grower
Cold Storages
Pages 8-11

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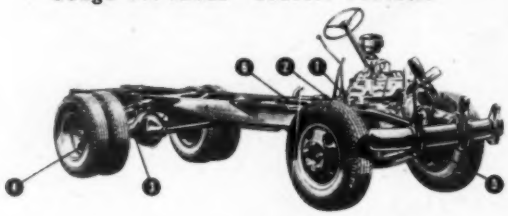

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2. RUGGED 3-, 4- or 5-SPEED SYNCHRO-SHIFT TRANSMISSIONS —"*Job-Rated*" for the load. Carburized gears; heat-treated shafts; antifriction bearings throughout.

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NOVEMBER 1949
VOL. 69 No. 11

CONTENTS

Calendar of Coming Meetings and Exhibits 4
Letters to the Editor 5
Marketing Agreement Programs for Fruits and Vegetables By Porter R. Taylor 7
We Built It Ourselves By Bill Hoard 8
Practical Aids in Handling and Packaging By E. S. Shepardson 10
A Sturdy Barn Becomes a 4,000-Bushel Cold Storage 11
The Transparent Pack 12
Plans for Your Cold Storage 13
State News 14
Marketing 15
In the News 16
News from Washington By Larston Farrar 16
Bagging Apples by Machine 17
Apples Keep Better in Purified Air 18
Apple Packing Geared for Efficiency By Walter Miller 19
Foreign Market Observations 20
Prepackaging Costs 23
At the End of the Harvest 29
Editorial Page 30

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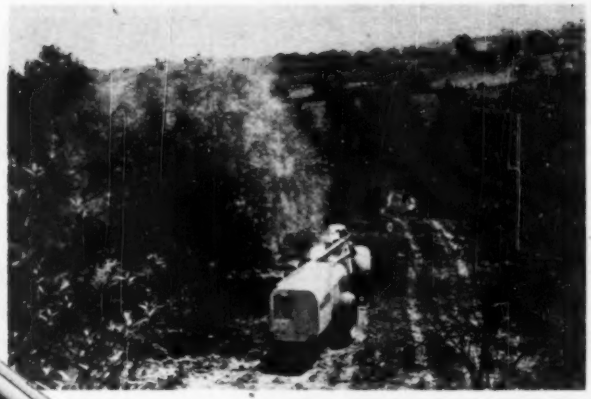

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CALENDAR OF COMING MEETINGS AND EXHIBITS

Nov. 1-3—Florida State Horticultural Society 62nd annual meeting, Tampa.—Ralph L. Miller, Sec'y, Plymouth.

Nov. 9-10—Minnesota Fruit Growers Association annual meeting, in joint session with western Wisconsin growers, LaCrosse Hotel, LaCrosse, Wis.—J. D. Winter, Sec'y, Mound.

Nov. 11—Orchard of Tomorrow Day, Bell Orchards, Boonville, Mo.—W. R. Martin, Jr., Sec'y, Columbia, Mo.

Nov. 12-13—Annual Student Horticulture Show, Oklahoma A & M College, Stillwater, Okla.—Fred LeCrone, Dept. of Horticulture, Oklahoma A & M College, Stillwater.

Nov. 15-16—Wisconsin State Horticultural Society and Wisconsin Apple Institute annual convention, Retlaw Hotel, Fond du Lac.—H. J. Rahmlow, Sec'y, 424 University Farm Place, Madison 6, Wis.

Nov. 16-18—Iowa Fruit Growers Association annual meeting, Memorial Union Bldg., Iowa State College, Ames.—Wm. H. Collins, Sec'y, State House, Des Moines 19.

Nov. 17-18—Oregon State Horticultural Society annual meeting, Eugene.—C. Q. Rawlings, Horticulture Specialist, Oregon State College, Corvallis.

Nov. 18-19—Montana Horticultural Society annual meeting, Polson.—R. O. Young, Sec'y, Missoula.

Nov. 29-30—Peninsula Horticultural Society annual meeting, Salisbury, Md.—Robert F. Stevens, Sec'y, Newark, Del.

Dec. 1-2—Arkansas State Horticultural Society annual meeting, Springdale.—Earl J. Allen, Sec'y, Fayetteville.

Dec. 1-2—Tennessee State Horticultural Society, Inc., annual meeting, New Southern Hotel, Jackson.—G. M. Bentley, Sec'y, Knoxville.

Dec. 5-6—Kentucky State Horticultural Society annual meeting, Henry Clay Hotel, Louisville.—W. W. Magill, Sec'y, Lexington.

Dec. 5-7—New Jersey State Horticultural Society annual meeting, Claridge Hotel, Atlantic City.—Arthur J. Farley, Sec'y, New Brunswick.

Dec. 5-6—Washington State Horticultural Association 45th annual meeting Wenatchee.—J. C. Snyder, Sec'y, Pullman.

Dec. 6-8—Michigan State Horticultural Society annual meeting, Civic Auditorium, Grand Rapids.—H. D. Hootman, Sec'y, East Lansing.

Dec. 7-8—Connecticut Pomological Society annual meeting, Hartford.—S. P. Hollister, Sec'y, Storrs.

Dec. 13-14—Oklahoma Pecan Growers Association annual meeting and nut show, Chandler.—Fred LeCrone, Asst. Sec'y, Dept. of Hort., Oklahoma A & M College, Stillwater.

Dec. 15-17—Illinois State Horticultural Society annual meeting, Hotel Abraham Lincoln, Springfield.—James M. Cummins, Sec'y, Dix.

Dec. 21-22—Fourth annual National Farm Electrification Conference, Stevens Hotel, Chicago, Ill.—Karl H. Gorham, Sec'y, 24 West 40th St., New York 18, N. Y.

Jan. 4-5 (tentative)—Maryland State Horticultural Society 52nd annual meeting, Alexander Hotel, Hagerstown.—A. F. Vierheller, Sec'y, College Park.

Jan. 4-6—Massachusetts Fruit Growers Association annual meeting, Worcester.—W. R. Cole, Sec'y, Amherst.

Jan. 6-7—Western Colorado Horticultural Society annual meeting, Mesa College Auditorium, Grand Junction.—W. H. McKeller, Sec'y, Grand Junction.

Jan. 11-12—South Carolina Horticultural Society annual meeting, Spartanburg.—Roy J. Ferree, Sec'y, Clemson.

Jan. 11-13—Indiana Horticultural Society annual meeting, Muncie.—Lorne J. Doud, Pres., R. 1, Wabash.

Jan. 17-18 (tentative)—Maine State Pomological Society annual meeting, Lewiston.—Rockwood N. Berry, Sec'y, Livermore Falls.

Jan. 18-20—New York State Horticultural Society 95th annual meeting, Edgerton Park, Rochester.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 23-25—Virginia State Horticultural Society 54th annual meeting, Hotel Roanoke, Roanoke.—John F. Watson, Sec'y, Staunton.

Jan. 25-27—New York State Horticultural Society eastern meeting, Kingston.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 25-27—State Horticultural Association of Pennsylvania annual meeting, State Educational Bldg., Harrisburg.—J. U. Ruef, Sec'y, State College.

Jan. 31-Feb. 1—New Hampshire Horticultural Society annual meeting and trade show.—D. R. Batchelder, Sec'y, Wilton.

Feb. 8-10—American Pomological Society annual convention, in conjunction with Ohio State Horticultural Society annual meeting, Deshler-Wallick Hotel, Columbus, Ohio.—W. D. Armstrong, Sec'y, APS, Princeton, Ky.; C. W. Ellenwood, Sec'y, OSHS, Wooster, Ohio.

Feb. 9-10—Idaho State Horticultural Society 55th annual meeting, Hotel Boise, Boise.—Anton S. Horn, Sec'y, Boise.

Feb. 20-21—National Peach Council annual meeting, Wardman Park Hotel, Washington, D. C.—M. J. Dorsey, Sec'y, 1502 S. Lincoln Ave., Urbana, Ill.

LETTERS TO THE EDITOR

Apples Getting Bigger!

Here they come. Bigger and bigger they grow. Who is to be the judge? Each apple arouses our enthusiasm and admiration. We feel like the Californian who on his first visit to Florida picked up a melon, asking, "Are these the biggest apples you grow here?" and received the quick response, "Quit fingering those grapes!"

The comments from 13 States that follow are in response to a letter printed last month from Mabel A. Keb, of Long Beach, Calif., describing a Staymared apple 12 inches in circumference, 5 inches high, and weighing 15 ounces.—Ed.

Wolf River

Dear Editor:

We have a fruit farm near Springfield, a very good fruit section in the heart of the Missouri Ozarks. We raise apples, grapes, and peaches in abundance. It isn't anything unusual to find apples which weigh 17 ounces or more; in fact, last week my son brought in a Wolf River which weighed 1¼ pounds, height 3¾ inches, circumference 14½ inches, diameter 4¾ inches.

Springfield, Mo. Geo. P. Young

Editor:

Some years ago I had a Wolf River that was 14 inches around! . . . .

I enjoy the letters in AMERICAN FRUIT GROWER.

Lovington, Ill. John Idall

Pippin

Editor:

I have a Fall Pippin that weighs 18 ounces and is 13½ inches in circumference. It is differently shaped than Miss Keb's apple, being only 3¼ inches high.

Plainville, Conn. Frank C. Jones

Dear Editor:

I grow the variety Twenty Ounce and it is quite common to find apples weighing 15½ ounces. Largest one this year weighed 18 ounces and measured 14 inches in circumference.

Dexter, Mich. Ezra E. Heininger

Dear Editor:

Must be you never heard of the apple tree called "Twenty Ounce." I have been buying apples from my neighbor for 10 years and each apple weighs 20 ounces or more!

Mohawk, N. Y. Mrs. George Zeman

Gravenstein

Dear Sir:

You probably won't believe it, but I had a Gravenstein about three years ago which weighed 29 ounces!

Bigfork, Mont. Luther J. Moen

Delicious

Dear Sir:

Miss Keb will have to hand it to Oklahoma now! I have two Red Delicious, 2 pounds 2 ounces, 12½ inches around, and 4¾ inches high. . . . .

Orlando, Okla. O. W. Gentry

Dear Sir:

I have before me on my desk a Delicious that measures 13½ inches in circumference and weighs 17 ounces.

I picked a Baldwin in 1946 that measured nearly 17 inches in circumference and weighed 19 ounces.

These large apples are not too rare here in the foothills of the Blue Ridge Mountains, as the soil is very fertile.

That's a large apple, though, Miss Mabel, and I hope you grow a larger one next year.

Monroe, Va. Donald S. Watts

McIntosh

Gentlemen:

I have mailed you a McIntosh 12¼ inches in circumference. . . .

Norristown, Pa. Thomas E. Hunt

Gloria Mundi

Dear Editor:

I can tell of a lot of big apples I have known of since 1880. I have seen several Gloria Mundi on the home farm when a boy that weighed 21 ounces each, some larger.

About 1915 I picked a Rome Beauty that weighed 23, another 22 ounces, that I showed at an apple show in Toledo, Ohio. S. E. Crawford in the Ohio River bottom about 1915 picked Rome Beauty from young trees which weighed well over a pound each, one 26 ounces, a lot of them 20 to 23 ounces each. He filled a three-bushel barrel with 126 apples and took them to the Zanesville, Ohio, apple show.

A Wolf River apple at the St. Louis World's Fair in 1904 was said to weigh 32 ounces.

It was perhaps 40 years ago that someone in Washington reported an apple which weighed 41 ounces.

Ironton, Ohio. U. T. Cox

Yellow Bellflower

Dear Sir:

On reading the article I went out and picked the largest apple left on our Yellow Bellflower tree and found it weighed 18 ounces and had a circumference of 13⅝ inches in both directions. There are others on the tree nearly as large and some of those already used were as large.

I do not believe my apples are the largest grown in California and did not even bother to enter them in the County Fair which is in progress in Santa Clara County, at San Jose.

Los Gatos, Calif. F. Miller

Paragon

Dear Editor:

We picked an apple weighing 19¼ ounces, a Paragon. A clipping from the Washington (Ind.) *Herald* dated September 17, which will substantiate our statement, is enclosed.

Washington, Ind. O. C. Chapman

Spokane Beauty

Dear Sir:

In 1921 I picked a Patten (Greening) in the orchard of Sil Matzke, South St. Paul, Minn. It grew on a sprout from a tree topworked to another variety. It was 4 inches in diameter and weighed 17 ounces.

But that was a small apple compared to a Spokane Beauty which was exhibited at the National Apple Show in Spokane, Wash., in 1911. The huge apple was shown on a scale which registered, as I remember it, a weight of 42 ounces. Perhaps someone else may remember that apple.

St. Paul, Minn. W. G. Brierley
Professor of Horticulture
University of Minnesota

The Spokane Beauty mentioned by Dr. Brierley undoubtedly is the same one referred to by Reader Cox.—Ed.

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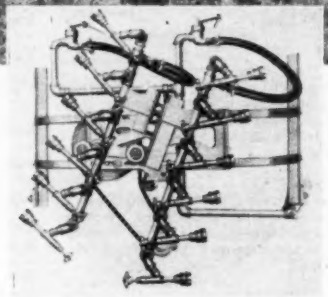

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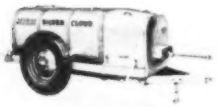

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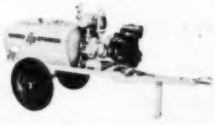
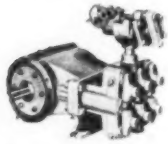


New General-Purpose Sprayer for gun and boom use at 30 to 400 lbs. pressures.



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MARKETING AGREEMENT PROGRAMS FOR FRUITS and VEGETABLES

By PORTER R. TAYLOR
American Farm Bureau Federation

What are marketing agreements? What do they accomplish? Can growers take advantage of them? These are questions growers are asking and Mr. Taylor answers in this timely article.

THE TOTAL deciduous fruit production of 1949 was only four per cent below the record volume of 1946. Fruit growers must realize that when record production is experienced in two out of four seasons, a similar volume can be anticipated in the future whenever weather conditions are reasonably favorable.

With this large potential volume of production, the industry must do everything possible to prevent low prices by increasing consumption as much as possible as well as by taking all practicable steps to bring the quantity and quality of fruit offered into line with demand, if it is to avoid heavy financial loss.

During the past 15 years an effective means of meeting such situations has been available through marketing agreement programs under the authority of the Marketing Agreement Act of 1937 with subsequent amendments. This Act is an exemption to the Anti-Trust Laws which authorizes industry programs, in cooperation with the Secretary of Agriculture, for certain commodities to secure more orderly marketing and to restore producer prices to parity.

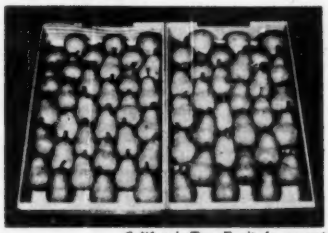
Marketing agreements are entered into by handlers of products in interstate commerce, while supplemental marketing orders are issued by the Secretary of Agriculture when more than half of the handlers by volume of business have signed such agreements and two-thirds of the producers affected by number or volume of production, or both, favor the issuance of such an order.

An order can also be issued upon producer approval if the Secretary of Agriculture makes a finding that this is the only method by which the purposes of the Act can be achieved.

The former method has been generally used for fruits and vegetables, while the latter has been more common in the case of milk.

Such marketing agreement programs are unique, as they are industry administered and financed, but any regulations are issued by the Secretary of Agriculture and enforced by the Department of Justice in the Federal Courts.

Administration of fruit and vegetable agreements is carried on by a committee nominated by the industry to represent various groups affected by the program as producers or handlers, or both.



California Tree Fruit Agreement

Relations with the Department of Agriculture are carried on through the Fruit and Vegetable Branch of the Production and Marketing Administration, which develops new agreements through public hearings and carries on the supervision of existing programs.

Florida Citrus Commission

Sizes of oranges ordinarily permitted to be shipped from Florida under regulations of the Federal grade and size committees range from 288 (extreme left) to 126 (at right), for a standard one and three-fifths bushel box. Baseball serves as comparison.

California Tree Fruit Agreement

California's Tree Fruit Agreement program includes Bartlett pears and plums.

Assessments are collected by the committee from handlers at a rate per unit based upon estimated shipments and a committee budget approved by the Secretary. Actual operation of the program is carried on by a manager of the committee with all policy recommendations made by the committee and submitted to the Secretary for his formal issuance as a regulation under the marketing order.

The Marketing Agreement Act gives specific authority for the following types of programs:

1) Regulation of shipments or sale by quantity or by variety, grade, or size. 2) Determination of surpluses of a particular commodity and development of a plan to equitably spread the burden of surplus among all producers. 3) Authorization of pools to which all handlers or producers shall make delivery of their portion of the surface, which shall be

(*Continued on page 22*)

WE BUILT IT OURSELVES

Auvil Brothers of Orondo, Washington, construct a 28,000-bushel cold storage

By BILL HOARD

A MODERN cold storage plant, on one corner of the Auvil Brothers orchard, near Wenatchee, Wash., is just as important a part of their farm operation as the trees themselves.

The actual orchard plantings on this up-to-date ranch on the banks of the Columbia River are keyed to the cold storage plant. And, although the plant has been a part of the ranch for only two years, it is considered such a vital part that the Auvil brothers agree they would have a hard time marketing their fruit at a profit without the cold storage unit.

The story of the Auvil brothers—Grady, Robert, and David—is not a typical orchard operation story, but it is typical of the dreams of many fruit growers.

Operation of the cold plant, which was built entirely by the Auvil brothers and their men on the ranch, has been planned ever since the first day when Grady Auvil cleared sagebrush from the rich, but dry, valley soil, and planted a few apple trees a little more than 20 years ago.

As the plantings increased and as the trees came into production, the need for a cold plant on the ranch, with the resulting grower control of the fruit until the day the fruit was sold, became more and more evident.

Of course, the cold plant itself is not a solution to the fruit grower's many problems, but, if the entire orchard operation is well in hand, the cold storage makes a complete producing, operating, and selling unit out of any good orchard.

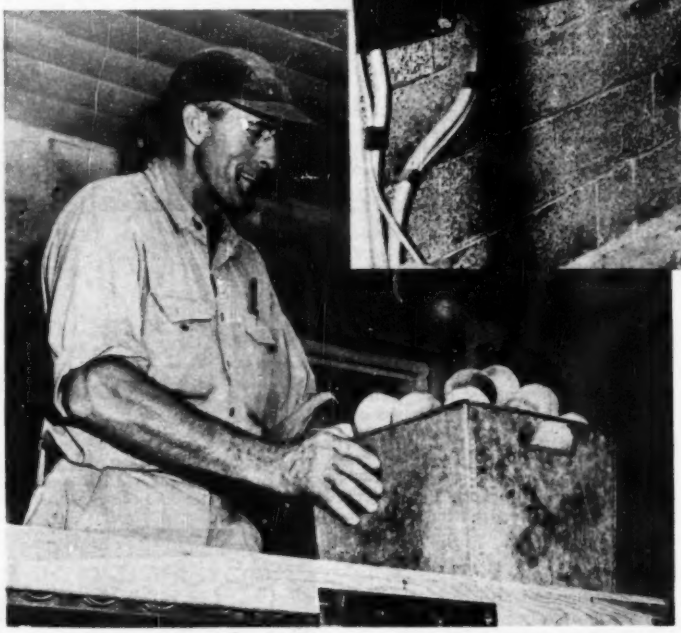
The Auvil ranch is just 83 acres. Seventy of these acres are planted to trees. There are three varieties of apples—Red Delicious, Golden Delicious, and Winesap. Three kinds of early peaches — Redhaven, Hale Haven, and July Elberta—keep things humming in the summertime, and Bartlett pears complete the fruit production picture.

Grady is considered one of the best horticulturists in the Wenatchee area, and was a top-flight field man for the North Central Washington area's largest grower co-operative before moving to his own ranch. Brother Robert is the man who is charged with keeping all the machinery running, and he has invented several labor-saving aids. David, the youngest, is in charge of packing and storing operations.

The 28,000 packed boxes of apples produced annually on the place can be stored in the huge cold room and sold throughout the fall, winter, and following spring, thus taking advantage of market improvements. The Winesap variety can be kept until the first peaches are harvested the next year, if necessary, Grady Auvil says.

The cold storage building is 130 by 100 feet, single story. Loading docks, packing room, and some space for empty box storage leave a cold room 60 by 100 feet. Every inch of the cold room, which is 11 feet, 3 inches high, is utilized; and a gadget developed by Robert aids in high-piling the boxes of fruit all the way to the ceiling.

It is a small platform, which lifts slowly from the floor level, carrying a stack of apples and a man upward slowly. As the electric motor powers a chain-drive mechanism, the workman can set boxes of fruit off the lift onto the main pile. When the



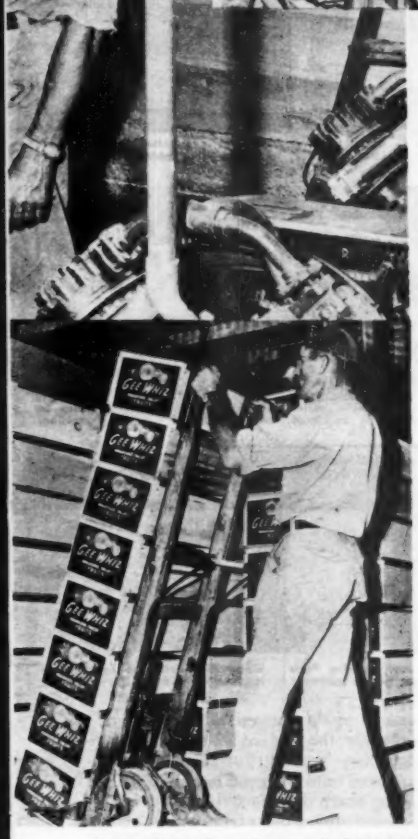
Grady Auvil is shown in large photo throwing a switch in the compressor room of their cold storage. Above photo shows him sliding a specially built square metal picking bucket along a conveyor leading into the packing room. These buckets when filled by the picker are placed on a low orchard trailer and hauled to the packing shed. This means the peaches are never poured out of the original container in which they are picked. The bucket holds enough to pack out a 30-pound box for delivery to market.

Box-making machine in the Auvil plant.

The plant is cooled with a one-way cold air system. The air volume is 25,000 cubic feet a minute, and the fans can replace all of the air in the big cold room every three minutes. This makes for rapid cooling and is particularly valuable during peach harvest when the big, red peaches, carefully packed in 30-pound boxes, are sometimes stored for a few days.

The Auvil brothers are proud of the fact that all of the complex wiring for the entire plant, including the compressor room, was done without calling on outside labor or technicians. The peak load on the compressor motors is 40 horsepower, with a cost of $3.60 per h.p. per month. Auvil's ranch is just 85 miles downstream from Grand Coulee dam and power isn't too expensive. A visit to the ranch during harvest-time convinces anyone that the cold storage and packing plant is the center of operations.

But there is a lot more to the ranch than the storage building. The trees themselves are a delight to any horticulturist. They just naturally look healthier than the average fruit trees. This is due to modern fertilization and cover crop methods. The entire ranch is irrigated by sprinklers, with water pumped from wells 60 feet deep.



Boxes of peaches, place packed but not lidded, are tracked into the cold storage to await arrival of a buyer's truck.

lift reaches the top, the boxes are all the way to the ceiling except for an air circulating space, and it starts down for another load.

The cold plant is constructed of four-inch concrete blocks in three rows, with two-inch air spaces in between filled with Vermiculite insulation. This makes an efficient 16-inch wall.

The ranch is equipped with two light tractors, three orchard trailers pulled by low-slung, cut-down "puddle-jumpers" made from old cars or trucks, and two road trucks.

Housing for permanent and transient help on the ranch is literally as modern as in any city apartment house, with electric or gas-equipped kitchens and tile shower baths.

The three Auvil brothers and the permanent men on the ranch have modern homes on the place. And everybody who works on the place gets all the fruit, vegetables, meat, and milk his family needs. Each family has a 40 cubic foot food locker, and there are additional 10-foot lockers used by neighbors.

Grady Auvil pioneered chemical blossom thinning of apples in the Northwest, and his other modern cultural practices include thinning peaches during blossomtime with tiny jets of clear water shooting from spray hose nozzles.

This early peach thinning results in three-inch fruit on the Redhaven variety, for example, which means premium prices for the bright red peaches. Although there was a general decline in fruit prices in 1949, Auvil's "Gee Whiz" brand peaches brought as much as or more than 1948 fruit—because of quality and because cold storage made it possible to time the shipments properly.

The well-planned, well-organized operation at the Auvil brothers' place means profits for the men who work on the ranch, as well as the owners.

Besides payment of the going hourly wage scale and all of the farm produce and living quarters, the men are paid bonuses at the end of each year. The seven or eight full-time men each get a hundred dollars a year for each year of employment up to five years, annually. And over and above this is a split of the year's profits between every man on the place, including the three brothers.

This amount is arrived at through an interesting system whereby each man grades every other man on the year's accomplishments. The money is paid according to these grade points, and it is easy to see that such an incentive system means conscientious work throughout the year.

But of first importance, of course, is the proper operation of the ranch so there will be a profit to be divided. And that's where the modern cultural practices, well-paid, satisfied labor, and a first-class cold storage and packing fit into the picture.

Careful cultural practices result in BIG peaches in the Auvil orchard, only 36 Redhavens filling a 30-pound box.

PRACTICAL AIDS IN HANDLING AND PACKAGING

By E. S. SHEPARDSON
Cornell University

CAREFUL and speedy handling of fruit during harvesting, grading, and packing operations is the aim of every fruit grower. Some practical suggestions for preventing excessive bruising of fruit during these operations, together with various aids for saving labor, are incorporated in this article and illustrated on this page.

A picking container, for example, should protect the fruit from bruises and be easy to use. According to Cornell Extension Bulletin 750, "Harvesting, Handling and Packing of Apples," the use of canvas bags, in the case of the McIntosh variety, injured 78 per cent of the apples.

The use of 20-quart metal pails resulted in only 10 per cent damage, and rigid-metal, canvas, drop-bottom containers caused 23 per cent injury. Such containers protect the fruit from ladder and tree limb injury. Where flat-bottom metal containers are used, the fruit is usually hauled directly to the grading table, thus eliminating the necessity of transferring it to field crates.

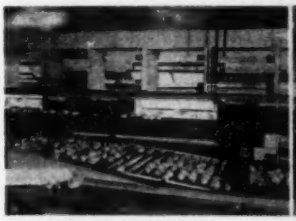
Apples will be bruised whenever they are dropped onto or bump against a hard surface, including other apples. Many bruises that do not show up at the time they occur during harvesting or in the packing house will show up later in the retail market or in storage.

Precautions which can be taken to prevent bruising in the grading, sizing, and packing operations, where much of the damage to fruit occurs, include the use of burlap bags to cushion the fall of apples when poured onto the grading table. Padding sharp corners and hard surfaces where apples drop from one level to another also will aid in preventing bruising.

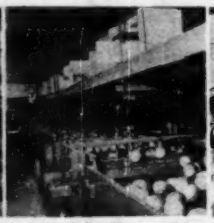
Equipment which cuts down on the number of times fruit has to be handled quickly pays for itself through decreased damage to fruit and saving in labor. Belt conveyors for "Utility" grade apples, conveyors to deliver empty boxes to packers and filled boxes to a central sealing and stamping point, a mechanical truck for transporting loaded pallets, are among such time and labor-saving equipment.

A burlap bag lets the apples out easy and helps to prevent bruising. Photograph by E. D. Markwardt.

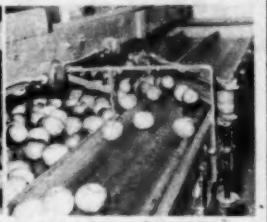
Apples dumped without cushioning their fall will bruise as they hit the grading table and each other.



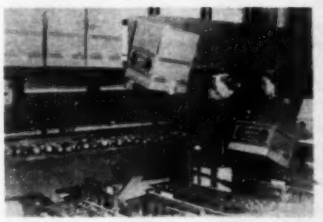
Padding helps to cushion the fall of the fruit onto the roller-sorter.



Hardly any drop for these apples! Container conveyor is overhead.

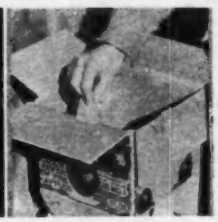


Vertical belt transfers apples to return belt, reducing bruising.



Conveyors and tilting box setup aid packers. Markwardt photo.

A facing ring and packing form saves work and speeds packing.



Metal clips hold box flaps out of the way while filling box with fruit.

A mechanical truck for transporting pallets loaded with boxes of fruit reduces handling and bruising.

Nail stripper and nailing press attached to roller conveyor speed up the operation of closing the filled boxes.

Left—The Keller storage. Above, at right—Paul Keller, builder, with his helper, Herman Asher.

A STURDY BARN BECOMES A 4,000-BUSHEL COLD STORAGE

By THOMAS H. WITTKORN

DURING the war when commercial cold storage was expensive and not readily available, many Lehigh County, Pennsylvania, fruit growers started to develop facilities on their own farms for holding their crops. Some of them have built modern new storage buildings, costing up to $50,000, and others have successfully converted buildings or barns already on the farm.

One of the best examples of using an old building for cold storage is at the orchards of Paul Keller, Guthsville, a few miles outside of Allentown.

"When I think of how we used to haul our apples to the commercial storage," commented Paul as we chatted in his empty storage room, "using three men to stack the fruit in the storage and three men to get it out again, and paying 30 cents a bushel to store the fruit, it makes me feel bad to think that we did not build our own farm storage sooner.

"Today, as fast as we pick our apples, they are placed in our own 4,000-bushel cold storage. When the time comes to sell our fruit, all of our 'Friend' sorting and handling equipment is right here under the same roof and it is an easy job to transfer the crates of fruit from the storage to the grader. It also is a big advantage to be able to keep our eye on the fruit until all of it has been marketed, which is about the first of April."

The building which Keller converted was a typical Pennsylvania overhang bank dairy barn. It was originally built into the side of a hill so that it has a ground entrance to the second floor. This floor extends five feet over the front first floor stone wall.

The first floor walls, which enclose a space 33 by 74 feet, are 21 inches thick and are of field stone laid in lime mortar. The walls extend below the ground level. Aside from the installation of the York refrigeration equipment, Paul and his farm helper did most of the work in converting the barn into a cold storage unit.

The work was started early in 1944 when Paul drove his tractor into the barn and scooped out enough earth to make way for a concrete floor. Enough cinders to make a five-inch layer were then hauled in, and a four-inch concrete floor was laid on top of the cinders.

The new storage room is separated from the fruit handling section of the building by a wall of concrete blocks, to make a cold room 33 by 36 feet. Care was taken to caulk the side of the wall as well as the ceiling joints.

A standard type refrigerator door measuring 6½ by 5 feet was installed in this partitioning wall, about in line with a similar door in the opposite outside wall. If Paul had to do this building over again, he says that he would use a smaller door in an outside wall as this would enable him to put in his apples to better advantage.

An eight-inch block wall was also erected at the rear of the storage room but it was placed two inches from the original stone wall so as to make an air space between them. For four consecutive years the storage room side of the two block walls was given a coat of a commercial waterproofing material, and Paul believes they now are sufficiently airtight. The inside surface of the two outer walls was given a coating of cement plaster.

The ceiling is nine feet high and the original hand hewn timbers which supported the barn floor and the hay mow are still in place. Over the barn floor Paul applied two alternate layers of tar roofing paper and hot tar, finishing this foundation with two inches of concrete.

When the cold room was completed, Paul was told it would prove unsatisfactory and that the charges for electric current would bankrupt him. Five years' use of the storage has proved that the prophets were wrong.

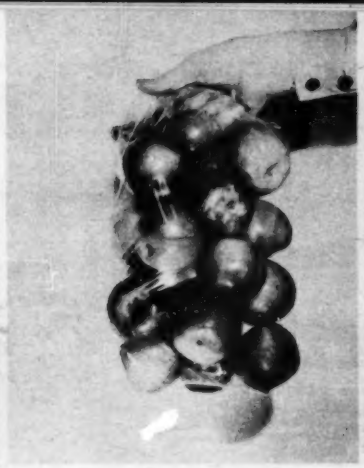
What makes his whole plan work is a York "Freon-12" water-cooled condensing unit with a 5 h.p. motor which operates a York CV-49A air conditioner.

Last year Paul's electric bill amounted to $429.68. This included the operation of his grader with a 1 h.p. motor and a water pump with a 1 h.p. motor which supplied the cooler and his home. The storage is in operation approximately seven months, from early September to early April.

He has found a simple way to cut down the electric current consumption whenever the outside temperature

(*Continued on page 29*)

Special filler head holds the "Snap-Sack"



Bag can be inverted but fruit "stays put"

Filling station in small-scale packing operation

THE NEW TRANSPARENT PACK

A NEW innovation in transparent consumer packages is the "Snap-Sack." The manner in which this bag opens and closes accounts for the name applied to it.

The bag is made of Pliofilm in a conventional square style. Into the top is sewed an elastic band. This elastic top permits the bag to be opened to its full capacity, making the filling operation easy and fast.

When the bag is filled, the elastic top snaps back. The small opening that remains provides ventilation and makes it easy to remove all or a portion of the contents. Reclosing is automatic.

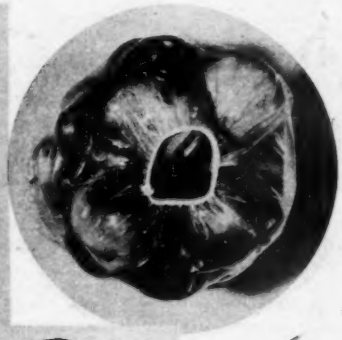
This elastic closure thus solves one of the biggest problems in the prepackaging of perishable products, since it enables the retailer to replace fruit if damage occurs.

The idea for the new package originated with Frank Belmont of the Granada Packing House, Anaheim, Calif. The bag is being manufactured by Shellmar Products Corporation, Mount Vernon, Ohio, and South Gate, Calif., and is available with printed designs for brand identity.

The Ahlberg filler head has been adapted by the Food Machinery and Chemical Company for use with the package.

"Snap-Sacks" are being used by orange and apple growers, including the Granada Packing House, for their Santa Anita oranges; the Appalachian Division of American Fruit Growers, Inc., for their Blue Goose apples; and Cowiche Growers, Inc., of Cowiche, Wash., for their Hy-Land-Kids brand of apples.

Prepackaged apples of Cowiche Growers



Partially open top provides ventilation

Blue Goose apples are from Appalachian area

Stock-printed designs are readily available

First use of the new bag was for oranges

PLANS FOR YOUR COLD STORAGE

Follow these plans when you build your fruit farm cold storage. A set of working drawings showing construction details will be mailed upon receipt of $1.00. Write to Plans Dept., American Fruit Grower, 1370 Ontario Street, Cleveland 13, Ohio.

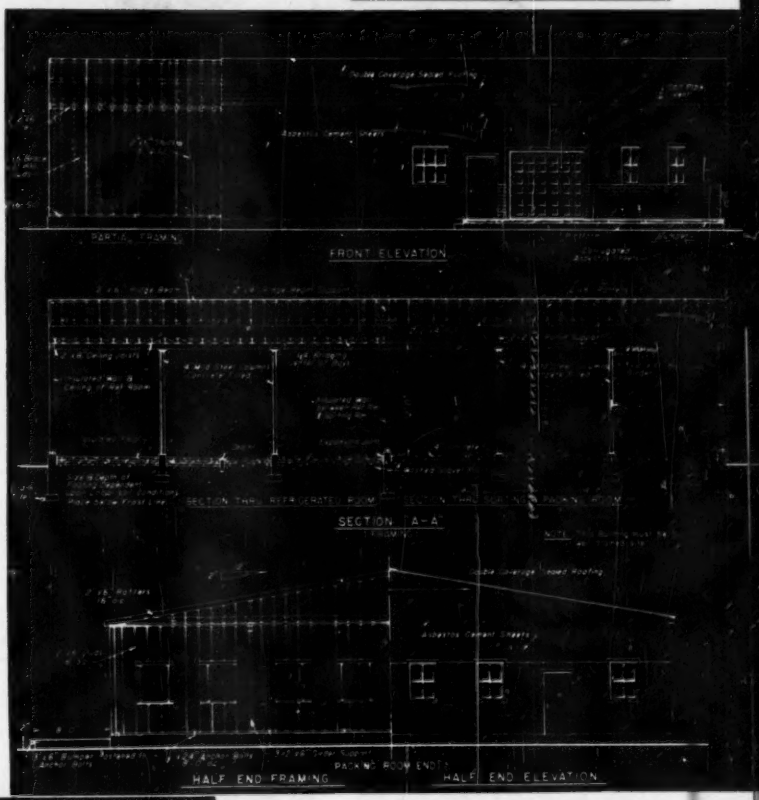
CONTROLLED movement of fruit from storage is becoming more and more essential to an orderly marketing program. Only where fruit farm cold storage facilities are available can such control be exercised to greatest advantage.

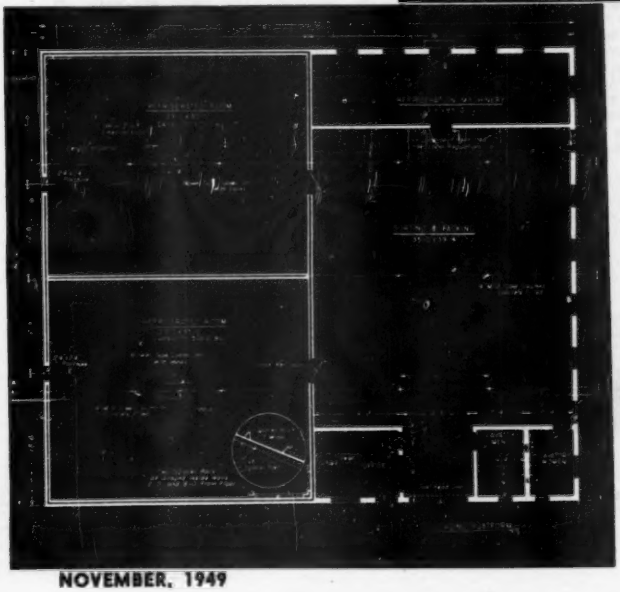
The tremendous need throughout the country for fruit farm storage facilities caused AMERICAN FRUIT GROWER to join forces with the Better Farm Buildings Association in designing a storage which would prove economical both from the construction and operation standpoints.

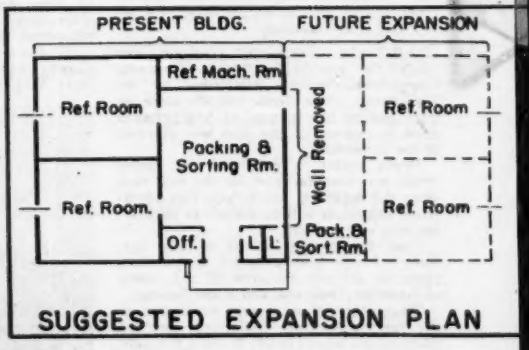
The plans on this page are the result of this effort. They are for a 10,000-bushel combination storage and packing house. Economical construction is assured because of the square pattern of the design.

The two refrigerated rooms are of 5,000-bushel capacity each, and each is equipped with specially fitted refrigerator doors for loading in and loading out. One room, when filled, can remain closed while the other is being loaded or emptied, thus conserving cold and current. Simultaneous storage of varieties requiring different temperatures also is possible.

The refrigeration machinery room accommodates four compressors. Since only two units are needed for the accompanying plan, space is available for the additional units when the storage is enlarged.







The expansion plan suggested above provides for two 5,000-bushel capacity cold rooms, thus increasing the capacity of this refrigerated storage to 20,000 bushels.

State NEWS

• World Apple Packing Contest in Washington
• Georgia Has First Mobile Soil Testing Laboratory

WASHINGTON—November 19 is the date set by the International Apple Packing Contest, Inc., for the third annual world championship apple packing contest, to be held in Yakima, scene of the previous two contests.

The prize money totaling $1,050 will be awarded to the eight finalists, as follows: First place winner, $500; second, $200; third, $100, and the remaining five winners, $50 each.

Invitations to enter contestants have been extended to various apple producing districts, including British Columbia and the Appalachians.

Quality of pack is stressed in the contest rather than speed. Packers are rated 75 points on quality of pack and only 25 points on speed.

MICHIGAN—The Michigan State Horticultural Society will hold its annual meeting on December 6-8 at the Civic Auditorium, in Grand Rapids. The banquet, always a gala occasion, will have as principal speaker Colonel Jack Major, humorist from Paducah, Ky. His topic—"Taxes, Women and Hogs."

Out-of-State speakers who will take part in the business program will include Beverly Byrd, production manager of Senator Harry Byrd's orchards, Winchester, Va., and John Peters, Aspers, Pa., a fruit grower and processor who has been active in both the National Apple Institute and the National Cherry Institute.

State finals for the State Pie Baking Contest will also be held. And to emphasize the need for production of high quality fruit, five growers and five fruit exchanges will exhibit the various methods of packaging apples, including the use of mesh bags, cellophane wraps, and the numerous types of box and basket packages.—*A. E. Mitchell, East Lansing.*

IDAHO—An advertising program was started this year by the Prune Advertising Commission, recently established by the Legislature. The fresh prunes were of good quality but because of low prices a good percentage of the crop was diverted to the canneries.

Prune nectar, a delightful red, pulpy drink, was manufactured for the first time since the beginning of the war. An advertising campaign will be needed to popularize this new product.

Even though the market is only fair, some of our best growers are making plans to set out orchards of red sports of Jonathan, Delicious, and Rome Beauty.

The career of a pioneer orchardist in the famous Council Valley of southern Idaho ended when Harold W. McClymonds, 50, died recently. Mr. McClymonds was a perfectionist and shortly after settling in Idaho in 1914 he established a reputation as a producer of quality apples. His orchard consisted of Jonathan, Rome Beauty, and Delicious varieties.—*Anton S. Horn, Sec'y, Boise.*

GEORGIA—A mobile soil-testing unit—the first of its kind in the nation—is being operated by the Georgia Experiment Station.

This laboratory on wheels will be used for "trouble-shooting," for education and demonstration, and for research.

When it visits their county, farmers will bring soil samples to the unit for analysis. The soil samples will be analyzed and results and recommendations will be given on the spot. This practice will make possible more reliable recommendations, since knowledge of local conditions will be available, states Dr. L. C. Olson, who is in charge of both the mobile unit as well as of the permanent Station laboratory.

Growing plants also can be more accurately analyzed for nutrient deficiencies and diseases, according to Dr. Olson, as the plants can be taken right from the field to the mobile laboratory.

The mobile unit, which is housed in a standard commercial panel truck, supplements the soil testing laboratory at the Station.

NEW YORK—Colin E. Nichols, 67, of Dickersonville, one of New York State's leading fruit growers, died September 12.

A founder of the Niagara County Cherry Growers' Association, Mr. Nichols had been instrumental in getting the growers to improve their crop as well as to advertise Niagara County cherries nationally. He also has assisted in founding similar organizations in Ohio, Pennsylvania, and Michigan.

Mr. Nichols' horticultural activities were not limited to cherries, for he grew a variety of fruits on his Ridge road farm. He also co-operated with the State College of Agriculture at Ithaca and the State Experiment Station at Geneva in the development of new strains of fruit.

He was a pioneer member of the Niagara County Farm Bureau and of the New York State Horticultural Society, and was formerly vice president of the New York State Apple Growers' Association.—*Geo. E. Toles, Hamburg.*

ILLINOIS—For the fourth consecutive year the 100-acre fruit farm of G. Leslie Smith in the western part of the State is producing a record crop of apples. This year's estimated production is from 35,000 to 40,000 bushels. Some of the 4,000 trees, which range in age from 17 to 25 years, are producing 20 to 45 bushels of apples each.

The excellent condition of the fruit as well as of the trees and foliage is attributed by Smith to the organic spray program he has followed the last three years. His use of such organics as Tag, Rhothane, DDT, and Parathion, has left his trees and fruit remarkably free of spray residue, as well as of red mite, aphis, red-banded leaf roller, and leaf hopper.

His spray program and sanitation and management practices also have prevented apple scab infection and codling moth damage. Because of some evidence of curculio damage, Smith plans to add Chlordane to his spray program next season, for the control of this insect.

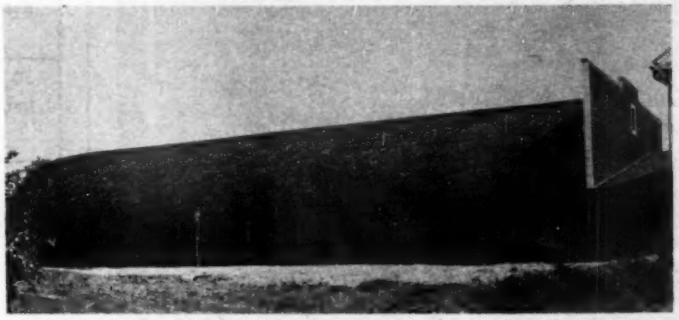
A precaution Smith has found necessary in the use of new materials is the possibility of incompatibility of certain spray mixtures, with the danger of foliage injury and russetting of such varieties as Golden Delicious.

Smith thinned his Golden Delicious this year to one fruit per cluster, spaced four to six inches apart. To prevent injury to the cluster base, the apple stem is left on the tree. About $500 was spent on extra labor for thinning this variety.

Aluminum ladders are used for picking in the tall trees. The apples are picked in bags, placed in ventilated bushel crates and trucked to cold storage in Smith's apple house in Rock Island.

This precooling gives six weeks longer storage, Smith claims. The storage rooms are equipped with activated carbon units.

Varieties of apples in the Smith orchard include Jonathan, Golden Delicious, Stayman, Grimes Golden, Rome Beauty, Red



QUONSET STYLE cold storage on the fruit farm of Lewis C. Berry and sons in Livermore, Maine. The storage has two 18-foot high rooms 50x100 feet with a 25-foot ridge pole. Capacity is 24,000 bushels. The 170-acre Berry orchard has 6,500 apple trees.—Harry A. Packard, Norway, Me.

Delicious, Winesap, Winter Banana, Cortland, Snow, and Wealthy.

KANSAS—R. G. Yapp, of Manhattan, assistant State entomologist in the north half of the State for the last 22 years, died September 10, after a very brief illness.—*Geo. W. Kinkead, Sec'y, Topeka.*

MARYLAND—A very fine and complete fruit packing house with cold storage was recently completed at Hancock for R. S. Dillon, Jr. This building, completely fireproof, combines a lot of new ideas of construction and management and its capacity may be doubled in the future, if desired.

This establishment is located near the recently-built storage and packing house erected by S. M. Fulton, and gives the Hancock fruit area a total of four grower-owned storages, two of which are just about tops in construction and arrangement.—*A. V. Vierheller, Sec'y, College Park.*

PENNSYLVANIA—Oliver Lohry was faced with an apple storage problem when he returned from a three-year hitch in the Army to take over the Lohry family orchard —31 acres of it—in Beaver. One-third of the apples held any length of time were wilting or rotting. Better insulation, refrigerating equipment, and humidifier were urgently needed, he found after conferring with his county agent, and economy was important.

The humidifier Oliver devised himself. Sections of three-foot burlap sewed together to form an endless belt and mounted in the fashion of the roller towel proved a satisfactory solution. Bottom end of the towel dips into a vat of water collected from defrosting coils. A hand turn of the roller exposes 15 feet of wet towel.

Four fans driven by 1/20 h.p. motors (two at each end of the 30x40x9-foot room) distribute the moisture to all parts of the storage. By the time the water is used, it is time to defrost the coils, and the water is used over again.

Motors, fans, condenser, and other materials were obtained from various sources, including war surplus sales. Twelve-inch walls of hollow tile were smoothed on the inside with an inch of concrete. This surface was coated with asphalt paint and covered with four layers of inch-thick cork insulation. The temporary wooden floor will be replaced with concrete, which will be poured over 24 inches of cinders already in place. Eight inches of shavings on a tongue-and-groove wooden ceiling effectively seal the top of the room.

The dripping burlap and fans provide 80 per cent humidity, and the insulation and refrigerating equipment keep the temperature between 34 and 38 degrees. Th 3 h.p. motor operating the compressor runs only a fraction of the time, evidence of a good insulating job. The five motors and lights take only $10 in current a month. Apple losses have been reduced almost to zero.

The fruit is moved into and out of the storage through a small, well-insulated door at the rear of the room. This door was installed, as were some of the other features, at the suggestion of John U. Ruef, State extension fruit specialist.

Capacity of the storage is approximately 4200 bushels. During peach harvest the storage is used for his two-acre crop. Golden Delicious is his apple specialty, but he also grows Red Rome, Stayman Winesap, and Red Delicious. —*R. M. Gridley, County Agent, Beaver, and Norman Eberly, Asst. Ext. Editor, State College.*

MARKETING

COLD FACTS

● The 1949 commercial apple crop continues to increase. October 1 government estimates indicated a crop of 132,125,000 bushels, up three million from September 1. Most of the increase was in the North Atlantic and Central States. Quality of the crop continues high.

● Holdings of fresh apples and pears in public cold storage on October 1 were 14 and 5 million bushels respectively, according to the USDA. Stocks of fresh fruits were greater than a year ago, but only fresh apples were above average for this time of the year. Approximately 5 million bushels of apples were in public cold storage a year ago. The eastern States accounted for about 10 million bushels in 1949 as compared with 4 million in 1948.

Frozen fruits in storage increased 15 million pounds during the month of September, with holdings on October 1 totaling 354 million pounds, 10 million pounds less than on the same date last year. Blackberries, blueberries, and raspberries showed a significant increase over last year, while strawberries showed a decrease of approximately 34 million pounds. Peaches, raspberries, and strawberries in consumer-sized packages of one pound or less accounted for a greater percentage of these frozen fruits than in any previous year.

GOOD MERCHANDISING

● That it is smart business to offer the consumer only good fruit is indicated in studies and surveys conducted by Cornell University and others.

In a Utica, N. Y., store included in the Cornell study 11 per cent of the produce display space was used for apples. The display was kept tidy. Spoilage losses were kept to a minimum by turning the apple inventory frequently and by picking out defective fruit and selling it at reduced prices. As a result, more than 15 per cent of the store's total produce sales came from apples.

● In Massachusetts last year a group of apple growers serviced a number of retail stores, replacing without cost to the retailer any poor fruit on display with good apples. These growers are repeating the procedure this year, states Norbert Eschmeyer of the International Apple Association. Such practices move apples.

"Impulse" buying is done by from one-third to one-half of the housewives, surveys show, indicating again that colorful and neat displays pay dividends. And in self-service stores impulsive buying is even greater than in other retail stores, the United Fresh Fruit & Vegetable Association has found. Multiple-item displays—three or four varieties of apples and two kinds of grapefruit for example—have been found to be much better than one.

● Aimed at educating the housewife to use the variety of apple best suited for a particular purpose, the USDA, as a part of its Food Trades Program, has prepared a list of the leading commercial varieties of apples produced in the nation and the special use the homemaker can make of 13 of the more popular varieties. This educational material is for distributor use.

PROMOTION

● The largest sum ever appropriated for the promotion of fresh cranberries—$500,000—will be spent by the American Cranberry Exchange from October through December. The crop this year is smaller by 17 per cent than last year's but 21 per cent larger than the 1938-47 average. The promotion is being tied in with advertising campaigns of a popular pie mix, sugar companies, and meat packers, and features the "Eatmor" consumer package for the first time.

● Florida citrus will be advertised in newspapers starting in November and running through the season. Half of the $400,000 appropriation will be used for oranges, more than $180,000 for grapefruit, and the remainder for tangerines. Fresh fruit only will be featured.

FRUIT PREFERENCE

● Chicago bakers are being queried by the USDA Bureau of Agricultural Economics as to the kinds of fruits they use in making pies, also how they like them put up—canned, frozen, dried, or fresh. This survey is another phase of the consumer preference studies, being conducted by the BAE under the Research and Marketing Act, to find new and improved uses of agricultural commodities.

IN THE NEWS

JOSEPH A. HOWELL

J. A. Howell

Associated with the Virginia-Carolina Chemical Corporation since 1922, Joseph A. Howell has recently been elected its president. Succeeding the late A. Lynn Ivey, he has been executive vice-president and director of the concern since 1944.

Since 1946 Mr. Howell has also served as president of Tobacco By-products and Chemical Corporation, a subsidiary of V-C. He is a member of the board or directors of the American Plant Food Council and chairman of its executive committee.

LEO L. RUMMELL

L. L. Rummell

A top official State representative of Ohio's farming interests, Leo L. Rummell has been elected to the board of directors of The Ohio Bell Telephone Company. Dean and director of the College of Agriculture at Ohio State University and director of the Ohio Agricultural Experiment Station, Mr. Rummell is also a director of the Ohio Farm Security Administration.

ERNEST HART

Ernest Hart

At the recent 16th annual meeting of the National Agricultural Chemicals Association, held in Spring Lake, N.J., Ernest Hart was elected president of the new board of directors. Mr. Hart is president of the Niagara Chemical Division of the Food Machinery and Chemical Corporation. He became associated with the former Niagara Sprayer and Chemical Company in 1914.

WESLEY P. JUDKINS

W. P. Judkins

On December 1 Dr. Wesley P. Judkins, associate horticulturist at the Ohio Agricultural Experiment Station, will begin his duties as head of the horticultural department at Virginia Polytechnic Institute. He fills the position left vacant in April by the death of Dr. E. L. Overholser.

Dr. Judkins has been in charge of the stone and small fruit research program at the Ohio Station and has been associate professor of horticulture at the university.

H. HAROLD HUME

H. H. Hume

Dr. H. Harold Hume, a leader in Florida horticulture for almost 50 years, became dean and provost emeritus of the University of Florida College of Agriculture on his recent retirement. He will be succeeded by Dr. J. Wayne Reitz, formerly with the USDA.

Dr. Hume joined the staff of the Florida Agricultural Experiment Station in 1930.

EXPORT SUBSIDY WILL AID APPLE AND PEAR GROWERS

By LARSTON D. FARRAR

Washington, D. C.

THE FRUIT INDUSTRY'S outlook for the immediate future became "fairly hopeful" during October as a result of developments in Washington and in other world capitals, according to representatives of the major fruit growing organizations and allied industries here.

Congress, on its last day in session this year, passed new farm legislation which includes several provisions for which fruit growers had been working for some time. There was overall satisfaction in fruit circles regarding the compromise farm bill.

Price Supports

There was a clear-cut statement of the *intent* of Congress that an important portion of Section 32 funds should be used to hold up the price of perishable commodities through purchases by the Secretary of Agriculture for varied purposes.

Specifically, Congress gave the Secretary much wider leeway in the purchase of perishable commodities through Commodity Credit Corporation for transfer to the Munitions Board, which in turn could use these to pay for materials this nation is stockpiling as part of its long-range military defense program.

The Secretary also was authorized to purchase such commodities for the School Lunch Program, for private welfare organizations to distribute in this country, and for private welfare organizations designed to serve areas outside the United States.

PMA Apple Purchases

The Production and Marketing Administration of the USDA already had begun the purchase of apples on a fairly wide scale before the final dressings were put on the farm bill. Beginning October 10, PMA started buying apples in all the major producing areas to the extent of some 250 carloads (roughly 225,000 bushels) a week. Although experts in the PMA could not say how long these purchases would be continued, on this scale, they were positive the purchase program would continue "until all the needs of the school lunch program have been met fully."

The PMA also announced that it will purchase for the School Lunch Program 1,000 tons of U. S. Grade B, or better, processed packed dried prunes of the 1949 crop year produced in Oregon and Washington.

Export Payment Program

In mid-October, the USDA announced its export payment program on apples and winter pears, following an earlier announcement of a dried prune export program for Marshall Plan countries, except Turkey and Greece. On apples and pears, payments will be about 50 per cent of the export sales price, f.a.s. U.S. port, but not more than $1.25 per container of approximately one bushel, to eligible U.S. exporters who sent fresh apples and winter pears of specified grades to countries participating in the European Recovery Program, plus Egypt, Israel, the Philippines, and western hemisphere nations, excepting Canada, Cuba, Mexico, and Venezuela.

Apples produced anywhere in the U.S. will be eligible for export under this program, but winter pears will be limited to Anjou, Bosc, Comice, and Winter Nelis varieties produced in Washington, Oregon, and California.

Canadian Restrictions Lifted

Biggest favorable news development for fruit growers—although it was offset to some extent by the results of the devaluation of Canadian and other currencies—was that Canadian restrictions on the imports of fresh fruits and vegetables had been lifted *in toto*, effective October 1, but no changes had been announced at press time relative to lifting of the restrictions on canned or other processed fruits or vegetables.

British Buying

Just what purchases of fruit Great Britain—or other foreign governments—will make in the U.S. as a result of the export programs announced by the USDA have not yet been made public. The British, who will spend $10 million for "surplus perishable commodities" in the U.S., under the recent agreement with ECA, are not likely to start purchasing before January, but are expected to buy $2 million worth of apples and pears at subsidized prices. The British also tentatively have agreed to buy (with ECA dollars) the same quantities of dried fruits from American growers, at prices reduced by CCC subsidies, as they purchased last season.

BAGGING APPLES BY MACHINE

THE COWICHE Growers, Inc., in the upper Yakima Valley of Washington State, long a pioneer in the field of prepackaged apples, currently is the first packing house in the State to experiment with the revolutionary new automatic bagger.

This is an adaptation of the machine which has been used for the last three years in the California citrus industry. Should it prove practical, according to Reuben G. Benz, Cowiche Growers sales agent, this bagging machine might revolutionize the marketing of a major portion of Washington apples.

Operation of the machine is relatively simple. Following the sorting of C-grades and culls on the standard sorting table, the apples are moved by conveyor belt to a sloping table where the apples roll down to the mouth of the bagging machine.

A mesh bag is held over the mouth of the bagger by two hooks and is automatically closed by a gate. As soon as the bag reaches its proper weight, the other half of the aperture is closed by a second gate. The weight is measured electronically

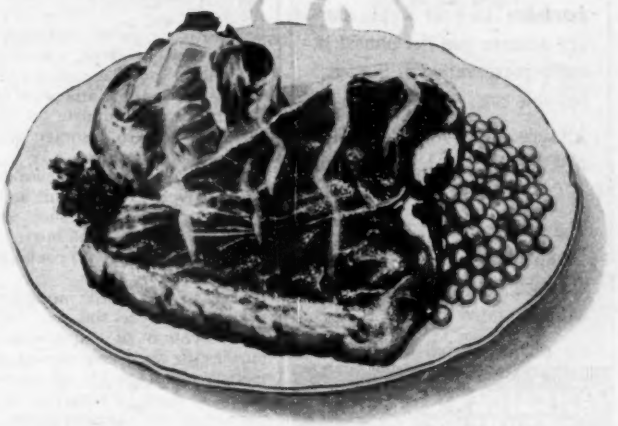
Automatic apple bagging machine, manufactured by Food Machinery and Chemical Corp., Riverside, Calif., in operation at Cowiche Growers, Inc., Cowiche, Wash.

and all of the bagging operation other than placement and removal of the bag is automatic.

Two baggers can be easily serviced by one operator, and once the bag is full the operator removes it and hangs it by the drawstrings on an endless conveyor, the bags then passing through a machine which automatically staples the drawstring in the closed position.

All current experimentation has been made with Jonathan and Winesap varieties in 4-pound bags, and acceptance of the bagged apples has been widespread.—*Gibby Clark.*

Everything... except the sizzle!



ALL these good things moved by railroad—except the sizzle! Yes, it took a lot of railroading to "cook up" this traditional American meal—juicy T-bone steak, green peas and big, baked potato.

The prize steer, for example, rode all the way from the Western ranges to a Corn Belt feed lot on a special livestock train. Along the route he was properly fed and watered—thanks to carefully watched train schedules and the railroad's precision handling of livestock. Then, fattened, slaughtered and dressed, this choice beef moved tableward once more—in a carefully iced refrigerator car.

And the potatoes—moving to market from different regions—took skilled railroad handling, too. Suitable cars, heated to hold temperatures above freezing in some areas, refrigerated to keep them properly cool in others, were on hand.

As for the peas, in addition to the fresh crop moving to market in refrigerator cars, the railroads handle most of the frozen, dried and canned varieties.

These are just examples of the way railroad "know-how" gets stirred into all the different kinds of foods which farmers raise for America's tables. And railroads do know a lot about these foodstuffs. How to anticipate seasonal and regional harvests. How to keep them fresh and flavorful en route. And how to get them to the most profitable markets—speedily and easily.

It's this practical effort to help farmers prosper so that the railroads may prosper, too, that has helped make the American farm and the American railroad system the envy of the world. Between them—efficiently, independently, self-reliantly—they're handling the vital job of helping to feed a hungry world. It is a shipping job, incidentally, which no transportation system except the railroads could handle.

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WASHINGTON 6, D. C.

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APPLES KEEP BETTER IN PURIFIED AIR

HOW PURE is air? On the mountain, in the valley, on city streets and farms, air is of varying purity. But, in the apple cold storage, air is definitely contaminated with odors and gases which affect the storage life of the fruit.

Among the gases discharged from fruit is ethylene which, when captured, is used to ripen bananas and other fruits. Ethylene gas and possibly other ripening gases stimulate the ripening of apples in the cold storage and shorten their storage life.

Apples also give off scald gases which collect around fruit and cause storage scald. Odors such as those given off by pine wood boxes may be absorbed by apples, contaminating their taste.

One of the most interesting developments since the war has been the invention of equipment which purifies the air in cold storage and extends the storage life of apples by a month or more by removing at least a portion of the ripening gases. Scald development is also retarded, and objectionable storage odors are removed.

Dr. R. M. Smock of Cornell University, with F. W. Southwick, first used activated coconut-shell carbon to purify the air of cold storage rooms. Primarily, the air purification system consisted of four or more canisters filled with activated carbon for each 1,000 bushels stored.

Flat filter plates have also been designed to contain the proper amount of activated coconut shell carbon to protect 1,000 bushels per filter section. Both types of carbon filters are adequate and prime consideration should be given to providing the correct amount of carbon to handle the storage room maximum capacity.

The carbon filters are enclosed in a metal cabinet equipped with motor and blower to provide the correct air-carbon contact time factor which is essential for efficient results. The units currently available are completely self-contained and require no elaborate installation. The total investment cost is less than five cents per bushel and the annual filter replacement is less than three-fourths of one cent per bushel.

Effect of air purification differs with various varieties. For instance, the effect on storage life was less on Greening and Rome Beauty than on McIntosh, Wealthy, and Cortland. In the Northwest, with varieties like the strains of Delicious and Jonathan, considerably more than a month was added to the storage life, from the standpoint of firmness.

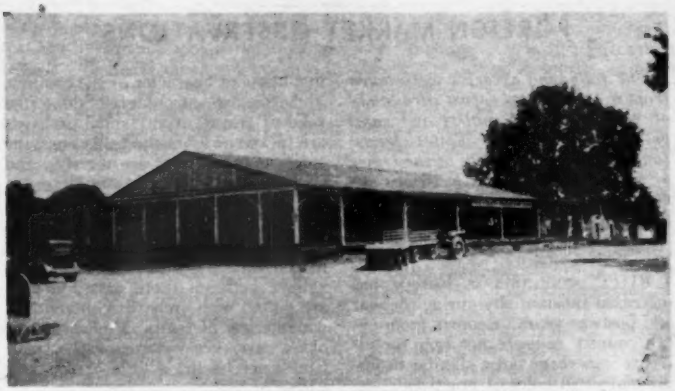
For scald control, air purification gives good results when single varieties are stored separately. When mixed varieties are placed in a room, good scald control is not assured although, on the average, air purification has given as good control as shredded oiled paper. Bartlett pears have responded well to air purification, with an increase of a month or more to storage life in Washington tests.

Two companies manufacture air purification units for fruit growers: the W. B. Connor Engineering Corporation of New York City and the American Solvent Recovery Corporation of Columbus, Ohio.

Investigations regarding air purification are being continued by Dr. R. M. Smock of Cornell University, Ithaca, N. Y.; Dr. A. Van Doren, Washington Agricultural Experiment Station, Pullman, Wash.; Dr. Fisk Gerhardt, USDA, Wenatchee, Wash.; and Dr. Elmer Hansen, Oregon State College, Corvallis. A good share of this work has been financed by the Refrigeration Research Foundation.

A glance into the future reveals many interesting possibilities for fruit storage. Perhaps there are other gases which also play a part in the changes which affect fruit in storage. At least one thing seems sure—as far as apples and pears are concerned, the old saying, "Pure as the air you breathe," is another casualty of the 20th century.

Storage life of McIntosh is lengthened more than a month in purified air.



An over-all view of the Pike County Producers Association packing house. The dock at the left is used for storing empty boxes rather than for unloading.

APPLE PACKING GEARED FOR EFFICIENCY

By WALTER MILLER

ONE OF Missouri's finest apple packing houses is that of the Pike County Producers Association at Clarksville, operated by Lewis Mallin and son, Robert, of the Kansas City firm of L. Mallin and Sons, and William Weakly.

Previous to 1941 the association did its apple packing on the second floor of an old mill which demanded much additional handling before and after grading. In line with the need for better facilities, a 90 x 110-foot building was constructed, and the harvest of 1941 was the first to be handled in the new building.

The packing house is located parallel to State Highway 79 and the Chicago, Burlington, and Quincy Railroad. Vinegar apples and a small amount of No. 2 grade are the only fruits shipped by truck from the association's packing house. Trucks bringing fruit from the orchards can back up just a few feet off the highway to the unloading dock on the west side. The boxes are stacked four high on the trucks and are removed by means of two-wheel hand wagons.

The apples are dumped into the grader, and, after passing over a metal-link sizer, are carried by conveyors to the packing chutes at the side of the grading machine and parallel with it. Off-grade fruit goes through a separate channel, and the apples eliminated by the first sizer drop into a conveyor and are carried to the basement. There are 10 packing chutes for top-grade apples and two for off-grade fruit.

An inverted tub and ring facer are placed on a stand beneath the chute. When the tub is filled, the packer places the whole unit on a gravity roll conveyor. Here a worker removes the tub and places a basket over the paper liner.

As it approaches the end of the line, the packed basket bumps into a chain which causes an automatic electric inverter to go into action. After inversion, the basket is pushed out on a bench by a final segment of the conveyor which is operated electrically. Baskets come off the conveyor line at the rate of about 225 an hour.

From the end of the conveyor line it is just a few feet to the main door through which most of the cars are loaded. There are three more doors on the track side of the building, however, making it possible to load four cars at one time. Full capacity of the grader is 4000 bushels in a 10-hour day, but it is seldom operated at its maximum capacity. The plant packs from 2000 to 2700 bushels per day.

The packing season usually begins about August 25 and lasts approximately six weeks. This year, however, David Cannon, orchard manager, estimates an eight-week packing season with a total pack of 100,000 bushels. They hire 50 to 60 workers and work a 10-hour day with a 15-minute recess each morning and afternoon.

Last year a total of 68,000 baskets was packed, which Mr. Cannon termed a "light pack." The association handles no other fruit except that from their own 400 acres of orchards.

With this efficient set-up, Pike County Producers Association cuts the time from tree to market to a minimum.

HALE
Centrifugal
ORCHARD
SPRAYER

The Hale Centrifugal Orchard Sprayer has been thoroughly tested and approved by leading growers.

The action picture gives you some idea of the excellent coverage you can obtain from the Unit. The Sprayer will pump any desired capacity or pressure up to 100 U.S. G.P.M. at 600 lbs., with ample reserve.

New Type Jet Agitation

A simple and trouble-free system of jet agitation is provided to keep the spray solution thoroughly mixed.

A single control lever enables the operator to premix the spray solution while adding it to the tank.

Continued agitation while spraying is controlled by the same lever; and circulation of the spray solution thru the centrifugal pump also helps to provide a homogeneous mixture of spray. The above features eliminate any danger of putting a concentrated mixture on some of the trees and a diluted mixture on other trees.

Ten Spray guns (specially designed for the Unit) are mounted on the rear of the Sprayer and can be individually adjusted for direction, reach and volume.

The pump requires no relief valve. It has few moving parts and such parts are easily and inexpensively replaced.

Users who keep accurate comparative cost records find that the Hale Sprayer not only requires less time to operate but also greatly reduces the cost of spraying.

Send today for Bulletin #302 on Hale Centrifugal Sprayer. No obligation (Dealer inquiries invited.)

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FOREIGN MARKET OBSERVATIONS

The following excerpts were taken from a preliminary report of a study of foreign market outlets and competition with United States fruits, conducted by F. A. Motz of the Office of Foreign Agricultural Relations under the provisions of the Research and Marketing Act.—Ed.

FRUIT production in Europe has increased substantially during the war and postwar years. Reports from every country indicate not only an increase in acreage but a significant improvement in cultural practices.

These reports have been in part borne out as a result of a hurried trip recently made through Central and Southern France, Northern Italy, and the Valais district of Switzerland. The purpose of the trip was primarily to check up on crop prospects for the current marketing season and to evaluate what progress, if any, had been made during the past 10 years.

American Grower in France

One section visited was St. Christophe, France, which is situated about 50 miles southeast of Bordeaux. The leading grower in this district is an American who has resided there since the end of World War I. He adopted American production methods in establishing and developing his orchards, and the results obtained have had an important influence upon other growers residing not only in the immediate neighborhood but in adjoining provinces.

He has about 50 acres of apples and peaches, consisting largely of American varieties. In the case of peaches, many of the more recent varieties developed in the United States have been selected and, from all appearances, they behave well under his conditions. Apple varieties consist largely of Delicious, Starking, Stamared, Winter Banana, and Canada Reinette.

Grapes in Southern France

Southern France, especially that area bordering the Mediterranean, is a veritable horticultural garden, producing fruits and vegetables of all kinds and descriptions. From Toulouse to Marseilles, a distance of around 200 miles, one is seldom out of sight of orchards or vineyards. Orchard plantings are small and scattered, but there is an almost continuous planting of wine grapes for more than a hundred miles.

The road between Marseilles and Genoa, Italy, follows the Mediterranean Sea. Despite the rugged, mountainous character of the country, orchards are encountered along the road of travel. Many small orchards are tucked away in the valleys and the steep mountainsides are terraced and covered with vineyards and olives.

The country does not begin to flatten out until after leaving Varriegio, and not until then do orchards begin to take on a more familiar sight. The valleys between there and Florence are dotted with orchards containing a wide variety of fruits. Vineyards and olives are everywhere, each small landowner having a little of this and a little of that.

Grape culture in the Arno Valley is rather interesting in that the vines are trained to trees. Every farmer has a few rows of trees, mostly poplar, elm, or mulberry, which run the length of his plot of ground, and grape vines are trained along the wires. The ground beneath—every inch of it—is cultivated and planted to hoed crops of one kind or another. Cultivation in Italy is extremely intensive, and land, which in many countries would be regarded as waste, is utilized in one way or another for food production.

Fruit Packing in Italy

The peach harvest was in full swing and packing houses were busy getting their J. H. Hales off to market. The fruits were large and clean and beautifully colored.

The fruit is packed in single layer flats, and a large part of it prepared for export. One large packing house was visited at Imola. The original house was completely destroyed by artillery fire during the war, and the present structure was completed about two years ago.

About 250 people were employed, mostly women and girls. Although it is a fine, modern plant, it bears no resemblance to an American plant because of the complete absence of machinery, conveyors, etc., which are an integral part of any packing house in the United States.

The fruit is graded and sized by hand. It is brought in from the orchards in large containers, each holding something over a bushel of peaches.

Each fruit is placed on a ring or a board containing holes of various diameters. The fruit is then placed in its respective box, which is hand carried to one of the packers.

The packers are squeezed together like sardines in a can. When a girl finishes a flat, she carries it toward the end of the house, to where the lidders are stationed, and places it on

the floor. The lidders work on tables, using a hammer and a mouthful of nails. There is much confusion and plenty of congestion but the work goes on. The capacity of the house is about eight cars per day. A car holds from 900 to 1,000 flats.

Swiss Fruit District

From Italy I crossed the Alps to the Valais district of Switzerland. Fruit growing in the Valais extends from Martigny to Siearra, a distance of about 25 miles. The valley is narrow and bounded on both sides by high mountains which rise abruptly from the valley floor. Strong winds sweep through the valley from a pass just west of Martigny, and have a distinct effect upon the growth of the trees.

Sion is the center of the district and specializes in apples and pears. Young orchards appear very promising as the older orchards did some 15 to 20 years ago. The older plantings, however, are declining and many trees had the appearance of being on their "last leg."

There is some question in my mind as to the future of the Valais as an important apple producing district.

A Self-Sufficient Europe?

By way of conclusion, I would like to point out that the expansion of acreage and the improvement of cultural practices observed on this trip reflect, in large measure, the scarcity of supply and the high prices which have prevailed during the past 10 years. Profits made during the war and postwar period, instead of being hidden or banked, were reinvested in new plantings and in the purchase of fertilizers, spray chemicals, and farm equipment.

Growers, of course, would like to see a continuation of the unrealistic prices that they have enjoyed during recent years, and they are already beginning to complain about foreign competition and its effect upon the home market. This is especially true in France. Italy is not affected by imports and is, therefore, concentrating upon an increased export program.

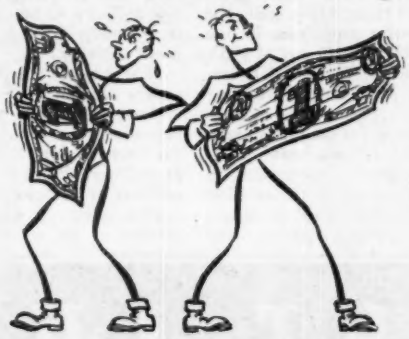
Although an increase in European fruit production is to be expected during the next few years, the goal of self-sufficiency is still a long way off. There are many limiting factors which preclude a year round supply, the principal ones being long keeping varieties and suitable and adequate storage facilities.

Import possibilities for American fruit during the first half of the marketing season may become increasingly difficult; but there should be a satisfactory outlet from January 1 on, when trading is once again permitted. There will be also periods during the first half of the season when American fruits will be used to fill the gaps, provided free trade is permitted to operate.

HANDY ANDY

In answer to an appeal from local prune and apricot growers for a mechanical harvester, Cliff Davis of Meridian, Calif., has come up with a machine which does the job. A Le Roi "Tractair" tractor, with the air pressure tank on the outside, a 12-foot knocker pole, and a "butterfly" sheet metal kite-shaped saucer make up the rig. No fruit touches the ground and there is no damage to the trees.—F. Hal Higgins.

THE LOWDOWN ON INSULATION



Which way do you stretch a dollar?

When you buy low-temperature insulation, you can stretch your dollars either one of two ways. You can stretch your dollars over a lot of *space* by buying cheap insulation. Or you can stretch them over a lot of *time* by buying Novoid Corkboard. Here's how it works:

It's true that you can insulate a room more cheaply with some materials than with Novoid. But you get a short run for your money. That's because most cheap materials eventually either get wet or pack down. Either way, they let in heat. Then refrigeration costs go sky-high.

Novoid Corkboard gives you a long lifetime of good service because its tough-walled cellular structure resists moisture and can't shrink. People who plan to stay in business a while figure that Novoid stretches their dollars the right way.

If insulation claims confuse you, write to us. We'll gladly send you the "lowdown." Novoid Cork, Englewood, N. J.

CHECK LIST OF INSULATION PROPERTIES

	Novoid Cork Insulation	Many Other Insulations
First cost	moderate	low to high
Installation cost	low	moderate to expensive
Eventual cost	low	high
Efficiency	remains high	generally deteriorates
Moisture resistance	excellent	some good, some poor
Vapor seal	simple	complicated or difficult to install
Structural strength	very good	some non-existent, others fair
Weight	very light	varies
Resilience	considerable	from fair to complete rigidity
Settling	none	a serious problem
Supporting structure	none	elaborate
Fire resistance	good	excellent to poor
Vermin resistance	good	excellent to very bad
Odor absorption	none	some are regular sponges

Consider EVERY factor when you buy insulation—and you'll buy NOVOID

MARKETING AGREEMENT

(*Continued from page 7*)

utilized outside of normal trade outlets through diversion, export, or other method. 4) Maintenance of inspection programs to standardize grade and to provide minimum standards of quality. 5) Filing of prices with the committee. 6) Establishment of unfair trade practices.

Congress specifically refused to include authorizations of payment of minimum prices to producers or of resale prices by handlers in the Act for commodities other than milk, although producer prices are allowed for milk and its products.

The Marketing Agreement Act specifies that marketing orders may be issued for a rather involved list of commodities and their products, which list was primarily derived from the commodities for which such agreements had been entered into under the original authority contained in the Agricultural Adjustment Act of 1933. This was revised in 1935 and later replaced by the Marketing Agreement Act of 1937.

In its present form the law authorizes the issuance of orders for fruits and their products, but not including fruits, other than olives, for canning or freezing. Orders may be issued for almonds, filberts, pecans, and walnuts and for apples produced in Washington, Oregon, and Idaho, but not if produced in any other State. Orders may also be issued for vegetables and their products, except for vegetables, other than asparagus, for canning or freezing. Orders may also be issued for tobacco and its products, soybeans and their products, hops and their products, honeybees, and naval stores with certain exemptions.

Fruit Agreements

As of October 1, 1949, four agreements were in effect for citrus fruits, eight for fresh deciduous fruits, two for dried fruits, eight for potatoes, three for nuts, one for hops, and one for vegetables.

The exclusion of apples, except from the three northwestern States, may be attributed to the opposition of certain leaders in the industry, who have apparently been unwilling to allow a choice to be made by handlers or growers, even on the permissive basis of the statute.

It should be noted that marketing orders are not authorized for fruits and vegetables for canning or freezing, except for olives and asparagus, for each of which commodity programs were in effect at the time of revision of the law.

This exemption has been continued because of the successful opposition carried on by the National Canners Association and its members to the extension of the Act to commodities for processing. As a result, citrus producers have lost large amounts because they have not been able to regulate fruit for processing as well as for fresh market even when prices were at ruinously low levels.

Space has not permitted outlining the detailed benefits of marketing agreement programs to producers, distributors, and consumers. But it seems only reasonable to assume that they are considered valuable by growers when they are continued in operation as a result of the referendums which are required in each program.

Certain of the older programs have continued in effect for five, 10, and even 15 years in a few cases. It is significant that six new agreements have been made effective so far in 1949.

Marketing agreement programs have succeeded primarily because they provide a method of industry regulation, under government supervision and enforcement, to solve the many difficult problems which the perishable industry must meet, especially in years when surpluses are serious. There is every reason to believe that these programs will become more popular in the future.

CUT THE COST
OF SPRAYING AND DUSTING

TURBULENT AIR

Sprays—Dusts foliage more thoroughly. The air blast can be varied from a zephyr to hurricane velocity assuring coverage under all conditions.

This labor-saving machine will protect your orchard in less than half the time of an ordinary sprayer, and will also save half of the material. These are not tests but actual grower experiences.

In spite of the Buffalo Turbine's great efficiency, it is an economical machine to own.

Write for prices and descriptive literature.

- SAVE on Original Cost of Equipment
- SAVE on Labor
- SAVE Time in Making Application
- SAVE on Material

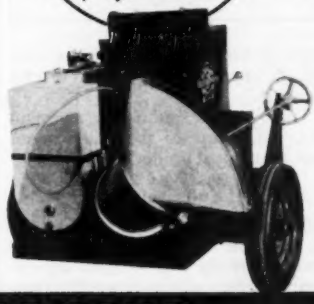
Growers tell us . . .

One man covered 20 acres with a Buffalo Turbine in 3 hours that formerly required 8 hours work by 2 men . . .

Used only 10% of the gallonage normally required, saved 50% of the material and had good control.

You too can save money—time—labor

WITH A
BUFFALO
TURBINE
Sprayer-Duster



BUFFALO-TURBINE
AGRICULTURAL EQUIPMENT CO., Inc. - - GOWANDA, N. Y.
Manufacturer of the Original Mist Sprayer-Duster

PREPACKAGING COSTS

THE cost of prepackaging apples in Washington State was determined in a recent study made by the USDA Production and Marketing Administration and the Washington State Agricultural Experiment Station. The study covered shipments during the 1948-49 marketing season of approximately 70 carloads of apples in transparent bags and 20 carloads in mesh bags.

Total Cost

Preliminary results indicated that the total cost of packaging nine 5-pound or ten 4-pound bags was 87.3 cents to 96.5 cents. These figures do not include the cost of labor for lidding the carton and other items, amounting to ⅞ cent when a new type of carton with flap tops was used and 2⅓ cents when the conventional type tray-pack carton with a separate lid was used. A comparable total cost figure for a standard box pack would range from 54 to 68 cents.

Costs for Labor

Labor costs ranged from 0.6 to 1.1 cents per bag or 5.9 to 10 cents per carton of nine 5-pound or ten 4-pound bags. This is comparable to a cost of 9.5 cents for the standard box pack. Not included in these costs are lidding the carton and operations beyond lidding, sorting, washing, grading, storing, etc.

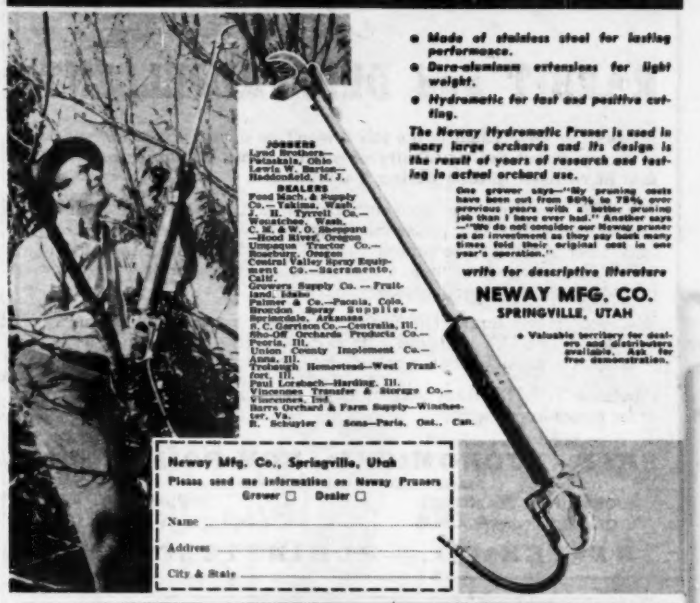
The hand packaging operation was found to be the highest in cost, at 1.1 cents per 5-pound bag. The apples were picked from a tub, bagged and weighed, then placed in the master container. Where there was a separate mechanized bagging line, the cost was 0.64 cent per 4-pound bag. The lower expense was achieved here by filling the bags by volume only and check-weighing an occasional bag. Not included in this cost, however, was the expense of removing the fruit from the sizing tubs and holding it loose pending the bagging operation.

Costs for Materials

Costs for materials ranged from 22 to 40 cents more per carton of 5-pound bags than for packing in the standard box. The 5-pound film bags, crepe wadding, and box with lid cost 81 cents per carton, while the cost of the standard box with liner and paper wraps ranged from 45 to 59 cents.

The cost of materials, particularly film bags, undoubtedly can be reduced in the future when large-scale prepackaging operations will allow larger purchases of supplies.

NEWAY HYDROMATIC PRUNERS



- Made of stainless steel for lasting performance.
- Dura-aluminum extensions for light weight.
- Hydromatic for fast and positive cutting.

The Neway Hydromatic Pruner is used in many large orchards and its design is the result of years of research and testing in actual orchard use.

One grower says—"My pruning costs have been cut from 50% to 75% over previous years with a better pruning job than I have ever had." Another says—"We do not consider our Neway pruner as an investment as they pay back many times told their original cost in one year's operation."

write for descriptive literature

NEWAY MFG. CO.
SPRINGVILLE, UTAH

• Valuable territory for dealers and distributors available. Ask for free demonstration.

JOBBERS
Lynd Brothers—Petaluma, Calif.
Lewis W. Barton—Haddonfield, N. J.

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Pond Mach. & Supply Co.—Yakima, Wash.
J. H. Tyrrell Co.—Wenatchee, Wash.
C. M. & W. O. Shepard—Hood River, Oregon
Umpqua Tractor Co.—Roseburg, Oregon
Central Valley Spray Equipment Co.—Sacramento, Calif.
Growers Supply Co.—Fruitland, Idaho
Palmer & Co.—Peoria, Colo.
Brandon Spray Supplies—Batesville, Arkansas
R. C. Garrison Co.—Centralia, Ill.
Rho-Ott Orchards Products Co.—Peoria, Ill.
Union County Implement Co.—Anna, Ill.
Trobaugh Homestead—West Frankfort, Ill.
Paul Lorsbach—Harding, Ill.
Vincennes Transfer & Storage Co.—Vincennes, Ind.
Barre Orchard & Farm Supply—Winchester, Va.
H. Schuyler & Sons—Paris, Ont., Can.

Neway Mfg. Co., Springville, Utah
Please send me information on Neway Pruners
Grower ☐ Dealer ☐
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Address .....
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PROTECTION through the DORMANT STAGE

• FRUITS AND VEGETABLES RICH IN VITAMINS •
• CANNOT GROW IN SOIL POOR IN MINERALS •

PUT THE ESSENTIAL MINERAL ELEMENTS IN YOUR SOIL NOW!

Through the cold winter months your trees and plants will fare better and return to production much earlier and in a healthier condition if a fall application of ES-MIN-EL is applied now—ES-MIN-EL contains the essential mineral elements of Iron, Copper, Manganese, Zinc, Boron and Magnesium. Let these elements protect and preserve through the cold winter months.

ES-MIN-EL

FREE BOOKLET Send card for ES-MIN-EL booklet to: Tennessee Corporation, Grant Building, Atlanta, Georgia or Lockland Ohio.

DEMAND
That your local fertilizer dealer furnish you a mineralized fertilizer containing the essential mineral elements. For information on mineralized fertilizer write: Tennessee Corporation, Atlanta, Georgia.

TENNESSEE TC CORPORATION

TRE-TEX

Reg. U. S. Pat. Off.

A

RABBIT and DEER REPELLENT

If trees are TRE-TEXed in the fall it won't be necessary in the spring to worry about the possibility of saving some valuable fruit trees that have been girdled during the winter.

TRE-TEX is a tried and proven repellent in use since 1942. Trees painted with TRE-TEX resist the attacks of hungry RABBITS, DEER and other bark-eating animals. Many orchardmen dip sprouts in TRE-TEX before setting them out in the fall. This assures winter-long protection from rodent damage.

We recommend liquid TRE-TEX that comes to you ready to apply. Powdered TRE-TEX is mixed with a denatured ethyl alcohol as per instructions on label then applied to trees as directed.

Purchase TRE-TEX from your nursery or orchard supply house, or order direct from factory.

SAFE – ECONOMICAL – NON-POISONOUS

DEALERS AND DISTRIBUTORS WANTED

LIQUID (FOB. PLAINFIELD) 1 QT.—$1.50; 1 GAL.—$5.85

POWDERED 1 LB.—$1.50; 5 LBS.—$6.75

TRE-TEX CO.—PLAINFIELD, IND.

Advertisement

From where I sit ... *by* Joe Marsh

A Tonic For The Missus

The missus came marching in with a new hat yesterday. She was as happy as a circus poster.

I've learned one thing about the hats she buys. A hat is a tonic to her. If she's feeling blue, nothing gives her a lift like a new hat. Now, I could trade in my old grey fedora without raising my blood pressure a notch. But I'll admit that more than once I've bought a new briar pipe I didn't need—just because life was getting a little bit monotonous.

With Buck Howell it's something else again. When Buck is feeling low, he gets over it by blowing on a broken-down clarinet he hasn't mastered in twenty years.

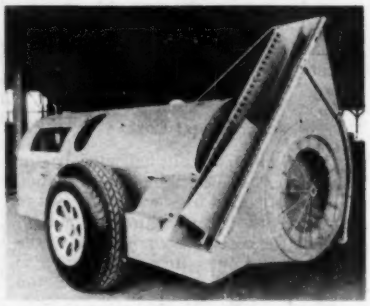
From where I sit, different people are *always* going to respond to different things in different ways. So let's keep a friendly understanding of what other folks get out of a new hat, an old clarinet, a chocolate soda or a temperate glass of sparkling beer or ale now and then.

Joe Marsh

Copyright, 1949, United States Brewers Foundation

NEW FOR YOU

Three-In-One Sprayer

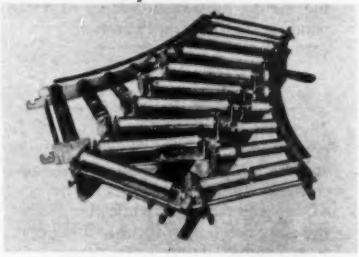


In large non-deciduous groves with heavy foliage the new Robinson Air-O-Spray rig does a job that formerly could be done only by hand, according to the manufacturer. A combination of air movements eliminates blind spots and assures complete coverage. This three-in-one rig also has a duster attachment which can be attached in a few minutes. Write the Robinson Fan Co., Gilroy, Calif., for further details.

Weed Killer

Where weeds and grass are a problem the orchardist will be interested in a new non-selective weed killer—Chlorax Spray Powder—which was developed by Chipman Chemical Co., Bound Brook, N.J. This herbicide is now available for use in locations where long lasting effects are desired and where fire hazard is a special problem. Chlorax is designed to kill both deep and shallow-rooted weeds and grasses and is especially recommended for use along fence rows, ditch banks, and roadsides. At lighter dosages it is used as a contact spray for a quick kill of annual vegetation.

Three-Way Switch



To further speed up packing house or similar operations, a new three-way switch has been developed by the Standard Conveyor Co., North St. Paul 9, Minn., for use with standard Litewate Roller or

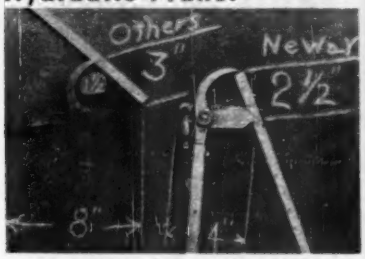
- NEWAY PRUNER
- CONVEYOR SWITCH
- ROBINSON SPRAY RIG

Wheel conveyors. It provides for straight-through, to the left, or to the right travel of commodities from a main line. The pivoted rollers are controlled by a hand lever from either or both sides.

Small Concentrate Sprayer

The small orchardist can now take advantage of the concentrate method of spraying with the "Mist-O-Mite" mist concentrate orchard sprayer. Manufactured by the Lawrence Aero-Mist Sprayer Co. of Greenfield, Mass., this new sprayer has a 200-gallon concentrate supply tank which is ample for 90 minutes of actual spraying. According to the manufacturer refilling time is reduced, labor is cut since the operation requires only two people, and savings in spray material run as high as 25 per cent as compared to conventional spraying methods.

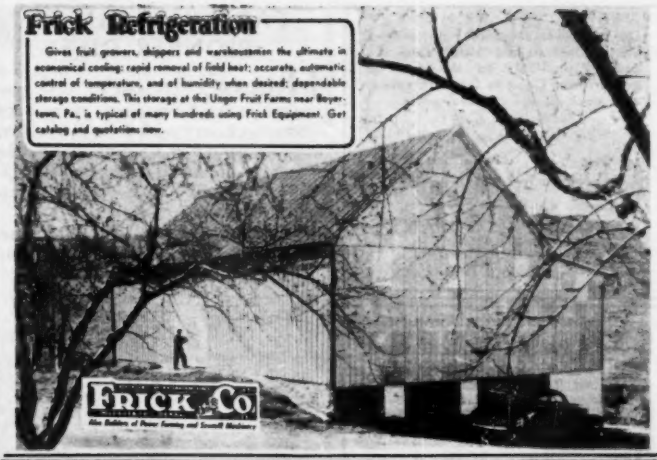
Hydraulic Pruner



The 1950 model Neway Hydromatic Pruner features new design improvements which make it unique among power pruners. The redesigned streamlined head makes cutting quicker and easier, particularly in tight and restricted places. The head is designed to give minimum distance between the point of the blade and the point of the opening in comparison with a pair of hand loppers while cutting the same diameter of green stock.

Stainless steel construction of hydraulic parts gives long years of trouble free operation. The handle has semi-pistol grip, making it maneuverable with one hand.

Available in two sizes. Write for literature, addressing Neway Mfg. Co., Springville, Utah.


Frick Refrigeration
Gives fruit growers, shippers and warehousemen the ultimate in economical cooling; rapid removal of field heat; accurate, automatic control of temperature, and of humidity when desired; dependable storage conditions. This storage at the Unger Fruit Farms near Boyertown, Pa., is typical of many hundreds using Frick Equipment. Get catalog and quotations now.
FRICK CO.

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P.O. Box 605, Monroe, Michigan

Announcing

FIRST FRUIT YEARBOOK

Encyclopedia of Fruit Growing in the United States

Plantings of various fruits, production, prices, changes, improvements in methods, varieties, fruit fashions, fruit packaging, fruit marketing, fruit competition.

An indispensable reference for anyone engaged in any branch of fruit growing or fruit handling.

See the story of gigantic American fruit growing in Pictures, Statistics, Graphs, and Words—which give a new understanding of the force of a great market.

JANUARY ISSUE

AMERICAN FRUIT GROWER

Our new trade-accepted fruit varieties are making orchard history and are proving profitable to thousands of growers from Coast to Coast. Dependable stock at new reduced prices.

Write for color illustrated catalog price list

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NURSERY COMPANY
THE NEWCOMB NURSERIES
WENATCHEE, WASHINGTON
Established 1906

THE NEWEST MONEY-MAKING
STRAWBERRY
Released Spring 1943 by Originator
20th Century Everbearing
Revolutionary plant, yields 1,000 cases first year, 2,000 second. Brought 25% premium in most markets. Prolific plant maker, good shipper, completed winter wherever exhibited. Government, state tested in every section of U.S. Eleven years in production by A. T. Kasuga, originator.
Protected—Write for Details, Prices, Contract.
20th CENTURY STRAWBERRY NURSERY
% Woodrow Kasuga
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WHOLESALE AND RETAIL
One, two, and three years. Certified. Early, midseason and late varieties, bargain prices.
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Evergreen Lining-Out Stock
TRANSPLANTS and SEEDLINGS
Pine, Spruce, Fir, Canadian Hemlock, Arborvitaes, in variety. For growing Christmas trees, Windbreaks, Hedges, Forestry, Ornamentals. Prices low as 2c each on quantity orders. Write for price list. SUNCREST EVERGREEN NURSERIES, Dept. AFG, Box 643, Johnstown, Penn.

FRUIT TREES
We specialize in growing High Quality Nursery Stock for Fruit Growers. A complete line of Fruit and Nut Trees, Berry Plants, Roses, Evergreens and Flowering Shrubs. Write for colored Catalogue with Money Saving Prices.
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Dependable Fruit and Nut Trees, Small Fruits, Ornamentals, and General Nursery Stock. Write for Free Color Catalogue.
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FRUIT TREES
Buy your trees direct from the grower
Apples Cherries Pears
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The WILLIS NURSERY CO.
Wholesale Growers OTTAWA, KANSAS

FARM MACHINERY PIONEER DIES

HOWARD C. LISLE, who pioneered in the development of modern farm machinery with John Bean, died on October 12 in Lansing, Mich. He was vice president in charge of agricultural divisions of Food Machinery and Chemical Corporation.

Mr. Lisle devoted his entire business career to the development of the

Howard C. Lisle

John Bean organization, helping to establish the eastern division of the company. Manager of this division for 31 years, Mr. Lisle became vice president of Food Machinery and Chemical Corporation in 1946. He was also a director and member of the executive committee.

Active in trade and professional associations in the farm equipment field, Mr. Lisle was a director of the Farm Equipment Institute and a member of the American Society of Agricultural Engineers.

PAC LENDS AN EAR

AN IMPORTANT cog in the fast-moving wholesale fruit and vegetable trade of today is the Perishable Agricultural Commodities Act. The PAC is a friendly arbitrator for differences which arise in the shipment and sale of fresh and frozen fruits and vegetables. It is also a stern disciplinarian for those licensees who act in bad faith.

Under the Act all commission merchants, dealers, and brokers are required to be licensed; and it provides for denial of license to those who are found unfit to engage in business. The license is renewable yearly as long as it remains in good standing.

The Act prohibits certain unfair practices and awards reparations to the injured buyer, seller, commission merchant, or broker. Complaints may be filed informally, and a USDA representative immediately gets in touch with the person complained against, investigates the case, and tries to make a friendly adjustment.

Strawberry Plants Certified
Grown on new land, excellent roots, large crowns, true-to-name, moss packed. Guaranteed to arrive in good growing condition. Plants you can depend on. Missionary, Blakemore, Klonmore, Klondyke. Postage paid, 100, $1.25; 250, $2.25; 500, $4.25. Express collect, 1,000, $6.00; 5,000, $27.50; 10,000, $50.00. Tenn. Shipper, Tenn. Beauty, Robinson, Premier. Postage paid, 100, $1.50; 250, $3.00; 500, $5.00. Express collect, 1,000, $8.50; 5,000, $37.50; 10,000, $70.00. Plants ready. Order now. We will ship date you specify.
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FRUIT & NUT TREES
Tualatin Quality Stock
Tualatin Quality Grown Trees
QUALITY NURSERY STOCK for
BULBS. ROSES.. VINES
ORNAMENTAL TREES & SHRUBS
Send for our Free Nursery Catalogue
TUALATIN VALLEY NURSERIES
P.O. BOX 313 SHERWOOD, OREGON

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Varieties Grapes
Specializing in French Hybrids
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CERTIFIED CULTIVATED
BLUEBERRY PLANTS
Wholesale & Retail
15 VARIETIES
Order NOW for Fall or Spring Planting
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Member of the Blueberry Cooperative Association

GRAPEVINES—CONCORD AND FREDONIA
Heavy 2 yr., 10—$2.00; 3 yr. bearing size, 10—$3.00. Other varieties. Price list free. Strawberries, Boysenberries, Blackberries, Raspberries, Asparagus, Rhubarb, etc.
IDEAL FRUIT FARM Stilwell, Okla.

FRUIT TREES Planters Greatest Planters
Prices. Peach, Apple, Pear, Plum and Prune, Cherry. Write for Prices. Drop a card for Free copy of our catalog.
CHAMPION NURSERIES
150 MAIN STREET • PERRY, OHIO

PEACH APPLE TREES LOW AS 20¢
Pears, plums, cherries, nuts, berries, etc. Grapes 10c. Shrubs, evergreens, shade trees 25c up. High grade quality stock cannot be sold lower. Free 40 page color catalog.
TENN. NURSERY CO., Box 4, CLEVELAND, TENN.

FRUIT TREES, BERRIES, GRAPES
Highest Quality guaranteed by our 75 years' experience growing the best stock. You, too, will find it profitable to grow Miller's fruits. Write for free descriptive catalog.
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Trampling Out the Vintage
By Joseph A. Cocannouer
A powerful story of farming on poor, overworked and eroded soil. The tragedy of creatures of habit and custom who refused to accept modern soil management and to their own ultimate destruction is the theme of this inspiring and interesting book. Joe Cocannouer, the author, is the Father of our present system of teaching vocational agriculture in our public schools. Many families which the author describes have their counterparts in every agricultural community. No one can read this book without becoming a better farmer and converting the bitter vintage of grapes into sweet and mellow fruit.
Sent postpaid on receipt of $2.75
AMERICAN FRUIT GROWER
1370 Ontario Street, Cleveland 13, Ohio

FRESH SHELLED PECANS
We offer choice, extra-large, fancy halves from new crop stock $4.25 per pail; 2 pails $8.25. Extra-large fancy pieces (broken-halves) $3.90 per can; two cans $7.75. All prices postpaid. Pecans packed in ⅞ gallon cans, net weight not less than 3 lbs. Write for prices of unshelled pecans.
GREENVILLE PECAN CO.
Dept. B-4 Greenville, Ala.

FOR QUICK, CLEAN PRUNING!

TIFFANY PRUNERS by BUCKINGHAM

They Slice!

It's snip, snip, snip for clean, healthy cuts—without bruises or splits—without brute force or time-wasting slips—thanks to the scientific slicing action of TiffAny Pruners.

Hardened, ground blades stay sharp longer—specially designed jaws hold large limbs close to joint for greater leverage, easier cutting. Blade points slim and narrow for small shoots—extra-strong hammer-forged handles with comfortable, stay-tight wood grips. Easily sharpened—do not have to be taken apart.

Three convenient sizes . . . ¾", 1" and 1½" cutting capacity.

Available at regular supply houses. Additional information and prices sent on request

BUCKINGHAM MANUFACTURING CO., INC.
15-17 Travis Street Binghamton, N. Y.

CHOICE QUALITY PECAN HALVES

From the new crop. Packed in ¾ gallon cans.
Select whole halves..... $4.25 can
Broken halves..... $2.90 can
5% cash discount on orders of 5 cans or more.

ALSO UNSHELLED PECANS

Schleys 50c lb., Stewarts and Success 45c lb.
5% cash discount on orders of 25 lbs. or more.
Prices quoted are delivered and satisfaction guaranteed.

THE V. R. THAGARD COMPANY
GREENVILLE, ALABAMA

BAR-WAY SPRAY HOSE COUPLINGS

Streamlined, full flow, replaceable, tested to over 2000 lb., with 500 lb. pull. ROSE ORCHARDS, Waterford, Mo., says "There are just about no wash." Performance, for dependability demand specification here: ½ in. with full ½" inside dia., 1" outside; ¾ in. with full ¾" inside dia., 1¼" outside. Demand 600-800 lb. working pressure, 2000 lb. or more burst. Then you only Bar-Way Couplings.

WILL NOT FAIL

BAR-WAY MFG. CO.
STAMFORD, CONN.

BOOK REVIEWS

● **Liberty Hyde Bailey** *($7.50) Princeton University Press,* by A. D. Rogers III. Besides being the story of the life and work of Liberty Hyde Bailey, one of America's greatest living horticulturists, this is also the story of the development of plant science in North America. The author traces the growth of scientific agriculture in the United States and Canada and describes the greatest achievements in botanical and biological research in the 20th century. This is an excellent book and one which should prove of much interest to those in the field of plant science.

● **Farm Glossary** *($1.50) L. S. Wolfe.* Written as an aid in reading farm literature, this is a compilation of terms used in agriculture and its allied sciences. Also included are short biographical sketches of people who have contributed to various phases of agriculture.

● **Practical Nut Growing** *($1.50)* by Gilbert L. Smith. A practical instruction book for the planting and care of nut trees, this was written primarily to be used in conjunction with sales efforts of the Benton & Smith Nut Tree Nursery. The book is given free with purchase of trees, or a credit coupon may be used on future orders.

A Timely Suggestion

BECAUSE of their strength and light weight, ladders made of aluminum or similar metals have become increasingly popular among fruit growers. However, unlike older types, metal ladders are excellent conductors of electricity.

The Farm Service Division of the Detroit (Mich.) Edison Company suggests, therefore, that special caution be taken to prevent contact with electric lines running through or alongside orchards, for such contact may result in a serious, even fatal, accident.

DETAIL PLANS

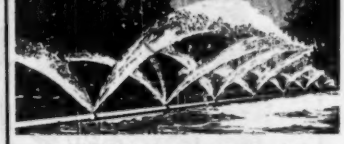
for APPLE STORAGE

Basic construction plans for expandible apple storage in units from 5,000 to 15,000 bushel capacity, including details on the installation of PALCO WOOL Insulation are available, with no obligation. Economy and compactness of arrangement plus proper application of PALCO WOOL low-temperature Insulation contributes to maximum operating efficiency. Write today for free plans and blueprints.

SAFERIZED PALCO INSULATION WOOL

THE PACIFIC LUMBER CO.
100 Bush Street, San Francisco 4, Calif.
35 East Wacker Drive, Chicago 1, Ill.
5225 Wilshire Blvd., Los Angeles 36, Calif.

RACEBILT IRRIGATION



Only RACEBILT offers these money-saving 4-way advantages in one lightweight, durable, easily portable aluminum irrigation system: SPRINKLER . . RISERS . . FLOOD LINES . . and GUN LINES which give up to four-acre coverage from one nozzle setting!

● Write today for free planning service and a copy of RACEBILT'S new, illustrated irrigation brochure—yours for the asking!

Race for the Race
FIRST IN ALUMINUM IRRIGATION!

OTTAWA TRACTOR SAW

384 Cuts Per Minute—cuts down trees, saws logs up, can pipe, sprinkler. Converts in one, with heavy duty, built-in fuel & throttle, safety clutch control, new power take-off and tractor. Low price. OTTAWA MFG. CO., 2-522 Forest Ave., Ottawa, Kan.

OPPORTUNITY ADS

Only 15c a Word—CASH WITH ORDER. Count each initial and whole number as one word. ADDRESS AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland 13, Ohio

CHAINS

CHAINS—TRACTOR, TRUCK, ROAD GRADER, BUS. Write for circulas, give tire sizes—Prompt shipment. HORNER TRACTOR SALES, Geneva, Ohio.

CIDER MILLS

FOR SALE—CIDER PRESSES, NEW AND REBUILT Farquhar and Mt. Gilead Presses. Repairs and supplies for all makes of presses furnished. Apple Butter Equipment. Small Apple Slicers. Tanks. W. G. BUNKLES' MACHINERY CO., 135 Oakland Street, Trenton, N.J.

FEMALE HELP WANTED

WOMEN TO SEW OUR READI-CUT "RAP-A-ROUND". Spare time—Easy profitable business. HOLLYWOOD MFG. CO., Dept. 4-11, Hollywood 46, Calif.

FOR SALE—EQUIPMENT & SUPPLIES

HAND SAWS, MACHINE SHARPENED LIKE NEW. $1.00. Include postage for return. ROY BAXLEY, Christopher, Illinois.

SECOND SURPLUS EQUIPMENT MAIL SALE. FARM engines, power plants, motors, winches, telephones, compressors, pumps. Many priced half or third original cost. Sale ends November 30. Rush card for big new catalog. BURDEN SALES COMPANY, 822-FG "O" Street, Lincoln, Nebraska.

WHISKY BARRELS FRESHLY EMPTIED, 50 GALLON. Prices: 1 Barrel—$5.00, 5—$23.75, 10—$45.00, 20 barrels up to truck loads $4.00 each. Minimum carload 200 barrels $3.75 each. All prices are f.o.b. Peoria, Ill., subject to change without notice. Terms—Certified check, Draft or Money Order with order. We do not ship C.O.D. or Draft attached. SHO-OFF ORCHARDS PRODUCTS CO., 107 N. Washington St., Peoria, Ill. Phone 4-4138.

LATEST WALNUT CRACKER. DIRECT FROM MANUfacturer. BENN THOMPSON, Harrisonburg, Virginia.

HONEY

5-LB. PAIL DELICIOUS HONEY $1.60. PREPAID. ROY BAXLEY, Christopher, Illinois.

FOR SALE—DELICIOUS HONEY CLOVER OR BUCKwheat. 5-lb. can $1.35; six 5-lb. cans $7.50; 60-lb. can $10.00. Prepaid. FRED WRIGHT, Arkport, New York.

HORSE TRAINING

"HOW TO BREAK AND TRAIN HORSES"—A BOOK every farmer and horseman should have. It is free; no obligation. Simply address BEERY SCHOOL OF HORSEMANSHIP, Dept. 13811, Pleasant Hill, Ohio.

MISCELLANEOUS

ARTISTIC 8x10 ENLARGEMENTS: — BEAUTIFULLY hand tinted in oils. $1.00 postpaid. Enclose negatives. CAPITOL, 215F Liberty Avenue, Staten Island 5, N.Y.

YOUR WATCH REPAIRED BY MAIL. INSURED-Guaranteed—Send Watch for Free Estimate. Watch returned postpaid if estimate is unsatisfactory. FREEMAN WATCH REPAIR, 939 F St., N.W., Washington, D.C.

LADIES BEAUTIFUL NYLON HOSIERY:—3 PAIRS to box $1.85 postpaid. State Size. GORDONS, 215 E. Liberty Ave., Dongan Hills 5, New York.

WINES, MAKE YOUR OWN FROM RAISINS, GRAPES, berries. No special equipment needed. Printed directions 25c coin. OZARK ENTERPRISE, Cell 6, Missouri.

500 PRINTED ENVELOPES $2.69 ppd. PLUTO, Crooksville, Ohio.

ORCHARDS FOR SALE

33 ACRES OF ORCHARD CONSISTING OF 1200-1400 apple trees—18 yrs. 50 Cherry trees—4 yrs. 50 Peach trees—2 yrs. Buildings include storage, barn with processing room and orchard equipment. Tenant house. Beautiful ultra modern house. All carpeted, 2 Baths, 10 rooms. Beautiful setting. Located 8 miles S.E. of Fremont, Ohio. Business interests require owner to move to another territory. LUCAS REALTY INC., Fremont, Ohio. Phone: Main 2254.

FRUITLAND ORCHARDS 3 MILES SOUTH OF Columbus, Indiana. 80 acres of trees in high state of production. 20 acres in cultivation, 40 acres in timber. 20 acres around the buildings. Beautiful brick modern home. Three tenant houses and two barns. Packing house and cider house. Trees, equipment and spraying equipment in excellent condition. Everything is here to run a first class orchard. It would take $140,000 to reproduce this beautiful farm, home, and orchard. Reasonably priced at $60,000. Couldn't build house alone for $25,000. This is a money-maker. Shown by appointment. JOHN S. McGINNIS REALTY COMPANY, 410 East Fifth St. Columbus, Indiana. Telephone 4490-4490. Home 8232.

"Cagey rascal, that Snodgrass—campaignin' on them B. F. Goodrich treads the farmers voted 2 to 1 fer!"

B. F. Goodrich tractor tires are built with an *open* tread—the kind of tread farmers voted for 2 to 1 in a nation-wide poll. Farmers prefer B. F. Goodrich tires because they get full traction, minimum slippage and long life. The separate cleats make the tread flexible. The tread gives as the wheel rolls. Dirt drops out. The tire stays clean. Work gets done faster because slippage is cut way down. The tire pulls evenly and firmly. Ask the B. F. Goodrich man to show you these hard-pulling, *open* tread tires next time you're in town.

An advertisement of The B. F. Goodrich Company, Akron, Ohio.

DURWARD F. FISHER DIES SUDDENLY

DURWARD F. Fisher, in charge of research on transportation and storage of fruits and vegetables in the USDA Bureau of Plant Industry, died suddenly on September 18.

Mr. Fisher joined the Bureau of Plant Industry staff in 1912 and, until 1930, was stationed at Wenatchee, Wash., where his research studies on fruit diseases established him as a national authority in the field of horticultural science.

In 1930 he was appointed principal horticulturist in charge of investigations in handling fruits and vegetables throughout the nation. Under Mr. Fisher's direction many valuable advances have been made in meeting the problems of harvesting and packing practices, ideal temperatures for most effective transportation and storage, and design of containers, refrigerator cars, and storage houses. His last major work was to spearhead a refrigerator car research program from which came specifications for a vastly improved car.

He was a member of the American Society for Horticultural Science, a counselor for the Society of Refrigerator Engineers, and a fellow of the American Association for the Advancement of Science.

135 ACRE FARM—100 ACRES APPLES BOTH YOUNG and bearing trees. 40 miles from Pittsburgh. House, tenant house, 2 cabins, grading house, 3 cold storage rooms, large implement building, complete with all necessary equipment. This is a good fruit farm. For details address AMERICAN FRUIT GROWER, BOX 94, 1370 Ontario Street, Cleveland 13, Ohio.

PENNSYLVANIA FARM FOR SALE. A VERY DESIrable upper York County Fruit Farm. 85 Acres, apples—Stayman, Jonathan and Grimes. 3 Acres Peaches. 40 Acres Farming Land. Frame house, conveniences, large barn, large packing house, cold storage, fully equipped and growing crop. Immediate possession. CHESTER W. ZEIGLER, Broker, J. Monroe Danner, R.E.S., Route 2, East Berlin, Pa. Phone 15.

PECANS

SHELLED PECAN HALVES, 3 LBS., $4.25 POSTPAID. West of Denver, add 25c. DEEP SOUTH PECAN SHIPPERS, Dept. A, Greenville, Alabama.

PET STOCK

67 VARIETIES, PIGEONS, PEAFOWLS, PHEASANTS. Monkeys, Rabbits, Pigs, Mice, Bees, Hamsters. Catalogue 10c. Free List. HOUCK FARM, Tiffin 2, Ohio.

POSITION WANTED

YOUNG SOUTH AFRICAN, MATRICULATED, WOULD like position on American fruit farm. Has had 1 year's experience on a South African apple and pear farm. Would like to learn new methods and gain further experience. All expenses in travelling would be paid by self. Please reply to MICHAEL STEINBERG, Box 7407, Johannesburg, Transvaal, South Africa.

POULTRY

RAISE TURKEYS THE NEW WAY. WRITE FOR FREE information explaining how to make up to $5,000 in your own backyard. Address: NATIONAL TURKEY INSTITUTE, Dept. 233, Columbus, Kansas.

TRADE MARKS

NATIONAL TRADE MARK COMPANY, MUNSEY Building, Washington, D. C.

WANTED TO BUY

WANTED: LATE MODEL BEAN SPEED SPRAYER. ALEXANDER, R 2, Box 133A, Montrose, Colo.

WANTED TO PURCHASE: SECONDHAND CIDER presses of all sizes. WRITE AMERICAN FRUIT GROWER, BOX 92, 1370 Ontario St., Cleveland 13, Ohio.

WANTED: OLD GRAPE BOOKS. SCHROEDER VINEYARD, Hutchinson, Kansas.

AT THE END OF THE HARVEST

The apples are picked and the mice have been baited.
Right now is the season when rhymes are created.
The spray rig is drained and the tractor is resting.
I sneak in a snooze while my dinner's digesting.
Each ladder's inspected and stored in the barn;
Each picking bag's mended with patch or by darn.
The Keiffers are picked or have dropped on the ground.
Sweet cider and doughnuts! Please pass 'em around.
There's frost on the roof tops; wild geese are heard calling.
Occasional snowflakes are slantingly falling.
The north wind is raw and the grass has stopped growing.
Somewhere near the cornfield a pheasant is crowing.
There's ice on the pond where we used to go swimming.
The leaves all have fallen; we soon will be trimming.
We're catching our breath from the rush and the hurry,
The wind and the rain and the harvest time worry.
The wood shed is filled and the fruit cellar's bulging.
The cookie jar's full and I'm often indulging!
I'm taking my wife for a spree in the city
As soon as I've finished this fruit grower's ditty.
—Albert L. Mason, Orleans County, N.Y.

BARN STORAGE

(*Continued from page* 11)

falls to 25 degrees or lower. By opening the 3 by 4-foot vent he had made in the ceiling of the storage room, which opens into the barn where the temperature is practically the same as outdoors, the cold air is brought into the storage room. Thus, by keeping a careful check on weather conditions, he has been able to keep his compressor from cutting in for a whole day.

Before the apples are put in storage, the temperature in the cold room is reduced to 40 degrees. This is accomplished by setting the thermostat at 50 degrees for three or four days, then dropping it to 45 for the same length of time. After several days at 40 degrees, the room is ready for the fruit. While the fruit is going in, the thermostat is set at 36 degrees.

After the storage is full, the machine will kick in at 33 degrees and go off at 31 degrees. All of the defrosting water is allowed to remain in the pan under the conditioner, and Paul says he has never had a wrinkled apple since using his storage.

As to the cost of his storage, he estimates it represents a cash outlay of approximately $3,500. Over half of this, or $2,000, was for the refrigerating equipment, which was installed on a contract basis. Sand and cement were the next biggest items, followed by the blocks at 12 cents each, then plastering, doors, etc.

The success of this cold room influenced Paul to build a larger one above it this past summer. His starting conditions, however, were entirely different, for this second story has brick walls instead of stone. He therefore has had to use considerable insulating material, such as Zerocel, cork blocks, and Insulite Bildrite. How well this cold room is going to work he will not know until next year.

Paul Keller is not one of those men who grew up in the orcharding business. He started by buying a run-down orchard in 1941 because his doctor told him he needed an outside job. He now has 75 acres of apple trees from 20 to 35 years of age, and 900 peach trees, 500 of which are expected to produce their first real crop next year. He is one of those fellows who is willing to be shown, and gives "Al" Hacker, the agricultural extension agent in Lehigh County, a lot of credit for the success of his venture.

HANDY ANDY

Countless man hours are saved when Jack Burton, Hillsborough County, Hollis, N. H., uses his home-made brush scoop in the orchards after pruning. He makes a clean sweep down each row with the brush scoop, raises the scoop with its load of brush, drives over to the brushpile, dumps his load, and returns. The scoop attaches to the lift bars of the power scoop and can be used to dump the brush directly onto a blazing pile of brush.—Charles L. Stratton.

Hollister's Internal Treatment of Trees

By internal treatment is meant direct injection into the tissue of the tree. Recommended for healthier trees and better fruit. Useful in fighting borers, blight, etc. There is no waste. Ingredients automatically sealed in tree prevents natural elements of nature from detracting from treatment. One treatment effective from two to three years. Guaranteed. Capsules $6.00 per doz. Postpaid. You have to see the results to appreciate it.

Hollister Tree Service, Inc.,
Sales Division,
P. O. Box 1467,
Clarksburg, West Virginia.

Here's the Way to Curb a Rupture

Successful Home Method That Anyone Can Use On Any Reducible Rupture Large or Small

COSTS NOTHING TO FIND OUT

Thousands of ruptured men will rejoice to know that the full plan so successfully used by Capt. W. A. Collings for his double rupture from which he suffered so long will be sent free to all who write for it.

Merely send your name and address to Capt. W. A. Collings, Inc., Box 557 E, Watertown, N.Y. It won't cost you a cent to find out and you may bless the day you sent for it. Hundreds have already reported satisfactory results following this free offer. Send right away—NOW—before you put down this paper.

Only $498

OTTAWA Mule Team Tractor

Finest low-cost tractor. Costs too little to do without. Engines burn gasoline or kerosene. Starter and lights available. Other larger Models to choose from. Over 4,000 in world-wide use. Time-proved, tested. At low cost they easily mow, plow, disc harrow, plant, cultivate, etc. Sold only direct to user. FREE details.

OTTAWA MFG. CO., 2-832 Garden St., Ottawa, Kan.

NO. 8 BARTLETT FRUIT PICKER

You may now have immediate delivery of the Fruit Picker you have been waiting for.

No. 8 Fruit Picker Head only $1.85 plus postage. No. 8 Fruit Picker with 12 ft. pole $3.50 via express. F.O.B. Detroit
Add sales tax where required.
No C.O.D. orders please.

BARTLETT MFG. CO.
3044 E. Grand Blvd., Detroit 2, Mich.

GOOD MONEY IN WEAVING

Earn money at home weaving rugs, carpets, etc. from old rags or new yarn—in your community! No experience necessary. $1,000 a year possible with our Counter Loom costing less than $50.00! Send for our free booklet today!
UNION LOOM WORKS, 15 Factory St., ROOSEVILLE, N. Y.

HUNT'S GRAFTING WAXES, RODENT REPELLENT, ETC.

MICHIGAN BEE & FARM SUPPLY
518 N. CEDAR LANSING 1, MICH.
"Successor to H. H. HUNT & SON"

SUCCESSFUL ORCHARDING

To answer your questions, American Fruit Grower is offering the following booklets, charts, and plans:

Successful Orchards—48-page illustrated booklet describing fruit varieties, planting, culture, etc.	$ .10
Successful Orchard Spraying—80-page booklet	.15
Rodent Control—32-page Illustrated booklet	.10
Compatibility Chart for Insecticides and Fungicides	.10
BUILDING PLANS (FULL-SIZE)	
Roadside Market	.50
10,000-Bushel Apple Cold Storage	1.00
Tenant House	1.00

Write American Fruit Grower
Plans and Booklet Dept.
1370 Ontario St., Cleveland 13, Ohio

The Orchard of the Future

THIS IS a busy time for the apple grower, concerned as he is with marketing problems, to stop and think what the apple orchard of the future should look like. He undoubtedly has some preconceived ideas and knows pretty well, were he to plant an orchard today, what methods he would pursue in establishing his orchard.

It, therefore, is with keen interest that we, and anyone who contemplates planting an orchard, will watch developments in Boonville, Mo., on November 11. This day has been set aside for an event such as never before has taken place in the history of fruit growing.

During this one-day event, designated as "Orchard of Tomorrow Day," an orchard, we are informed, will be planted which will meet the exacting production and marketing problems that may be anticipated in 1965. A 30-acre field, now in field crops, pasture, gullies, and wasteland, will be transformed—in one day—into the orchard of tomorrow through the use of the most scientific methods known to date.

There will be placed in operation a soil and water management plan for the conservation of soil, water, and fertility for tree use during the next 30 years. Trees will be planted with power equipment. A large pond will be constructed for furnishing spray water.

The project is being sponsored by the Missouri State Extension Service, the State Horticultural Society, soil conservation experts, etc. C. C. Bell, fruit grower, is owner of the field that will be transformed.

We shall follow with considerable interest the development of this orchard on November 11 and its progress in the future, to see how closely the production and marketing needs of the future were anticipated.

Refrigeration and a Bit of Philosophy

CREASY'S "Fifteen Decisive Battles of the World" are accepted as points in world history where great decisions were made that markedly altered human affairs.

There have been equally significant events in industry, as the vulcanizing of rubber and the development of the internal combustion engine. In agriculture, too, there are markers of progress, as the invention of the cotton gin and the binder, and the development of rural electrification. One of the events with vital consequences to the fruit industry is mechanical refrigeration and with it the manufacture of artificial ice.

Less than 100 years ago, the movement of perishable fruits and vegetables was limited. The cart had given way to the stage and the packet boat, and they in turn were doomed by the DeWitt Clinton in 1833. But even when the country was netted with rails, the movement of produce was still limited by its perishable nature and the time involved.

It was the introduction of artificial ice and the development of the refrigerator car that made shipments possible and paved the way for modern mass movements of perishable produce from newly discovered areas of production in distant corners of the country. To be sure, ventilated cars had been used for short hauls, as from the Connecticut Valley to New York. And by 1857 a trial shipment had been made using natural ice. Along the Atlantic Seaboard, vegetables were sent from Norfolk, Va., to New York in 1885, and a shipment of fruit reached New York from California in 1888, followed by oranges from Florida in 1889.

But these first movements were limited to regions where natural ice occurred. Since much of the desired movement was from southern sections where winter cold failed to provide natural ice, expansion was dependent upon the development of artificial ice. This occurred during the period 1880-90. Two hundred plants were established in Florida in 1889 and several were erected in Virginia in 1891-92. From then on, the amount of produce moving under refrigeration proceeded rapidly. In 1885 there were 990 refrigerator cars in use; in 1890, there were 3,398; in 1900, 16,760; in 1921, 99,672; in 1924, 121,000; and in 1949, 150,000.

Some of the problems the fruit industry has had to face have been solved by refrigeration, but other problems have been raised. Competition from distant regions has been intensified. The growing pains evident in southern and southwestern producing areas from 1890-1930 were in part due to the sudden impetus given by the introduction of artificial ice.

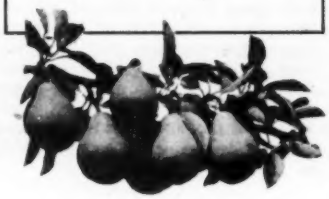
Now mechanical refrigeration has reached to truck shipments, to large cold storage warehouses, and back to local storages on the farm. It is all desirable from the standpoint of a better article for the consumer and is essential to modern society. But it has been one of the factors responsible for the national average of 25 cents to the producer and 75 cents to the distributor and handler for each dollar the consumer pays. This has been a year of lower prices in the fruit industry. Charges are high. Net profits are low.

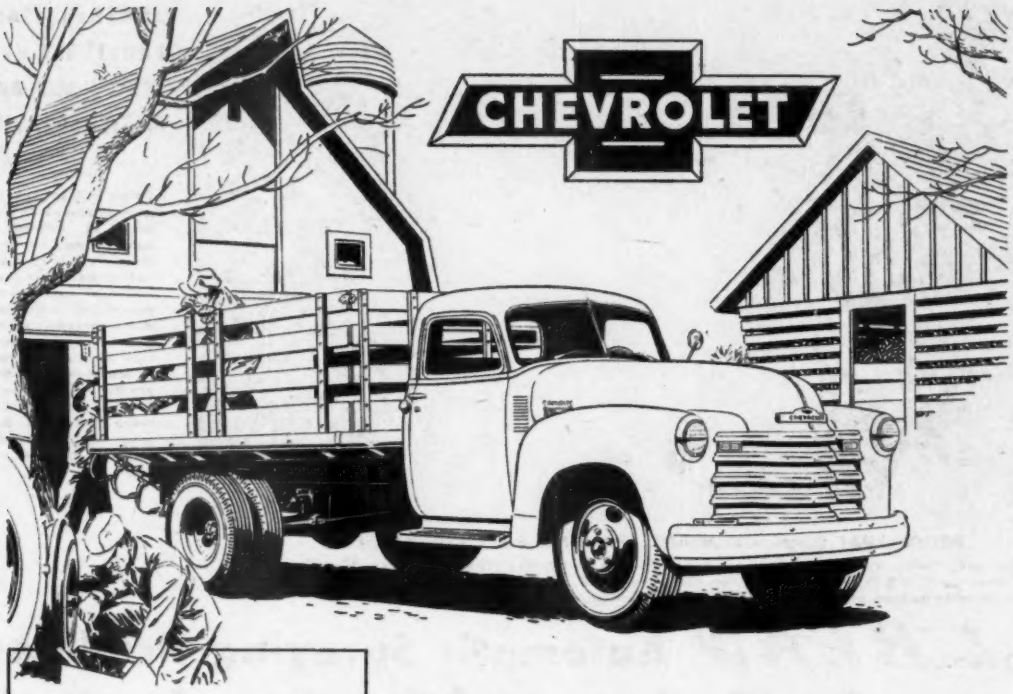
For every technical advantage one place, there is a disadvantage somewhere else. There is a change and a readjustment with every so-called step in progress in modern society. The fruit industry has become a highly specialized and competitive field. The problems we face are not merely local, they are national and international. The impact of refrigeration is an example. What we are witnessing is a struggle for economic advantage—region against region, crop against crop, and individual against individual.

It is well to reflect on this and similar problems during the winter months that lie ahead. The fruit industry requires brains and skill and clear thinking, and young men with all three.

Fruit Production at a Glance

	1938-47	1948	USDA Oct. 1, Est. 1949
	Thousand bushels		
Apples	111,114	89,407	132,126
Eastern	47,783	36,406	55,330
Central	19,400	13,444	28,061
Western	43,931	39,557	48,735
Peaches	68,947	65,352	75,114
Cling., Calif.	17,372	20,845	23,752
Free., Calif.	10,901	9,292	11,043
Pears	30,832	26,334	35,936
	Tons		
Grapes	2,736,160	3,044,400	2,941,800
Plums (fresh)	80,080	70,500	96,200
Prunes (fresh)	129,000	88,500	156,800
(dry) Calif.	201,200	182,000	166,000





4-SPEED SYNCHRO-MESH TRANSMISSION
New transmission eliminates double-clutching—enables driver to maintain speed and momentum on grades. On series 3800 and heavier duty models.

STEERING COLUMN GEARSHIFT CONTROL
Extra driving ease and convenience is yours with Chevrolet's new steering column gearshift. In all models with 3-speed transmission.

FOOT-OPERATED PARKING BRAKE
New clear floor area! This unique brake provides outstanding safety and convenience in models with 3-speed transmission.

IMPROVED VALVE-IN-HEAD ENGINE
Greater durability and efficiency is featured in Chevrolet's Thrift-Master and Load-Master Valve-in-Head truck engines, world famous for their economy.

SPLINED REAR AXLE HUB CONNECTION
Greater strength and durability in heavy-duty models! This important new feature means a longer, more economical life for your heavy-duty truck.

NEW DUBL-LIFE RIVETLESS BRAKE LININGS
Brake linings on series 3000 models are bonded to the brake shoes by special "Perma-Bond" process developed by Chevrolet and General Motors Research Laboratory. Thoroughly tested and proved, these rivetless linings last up to twice as long!

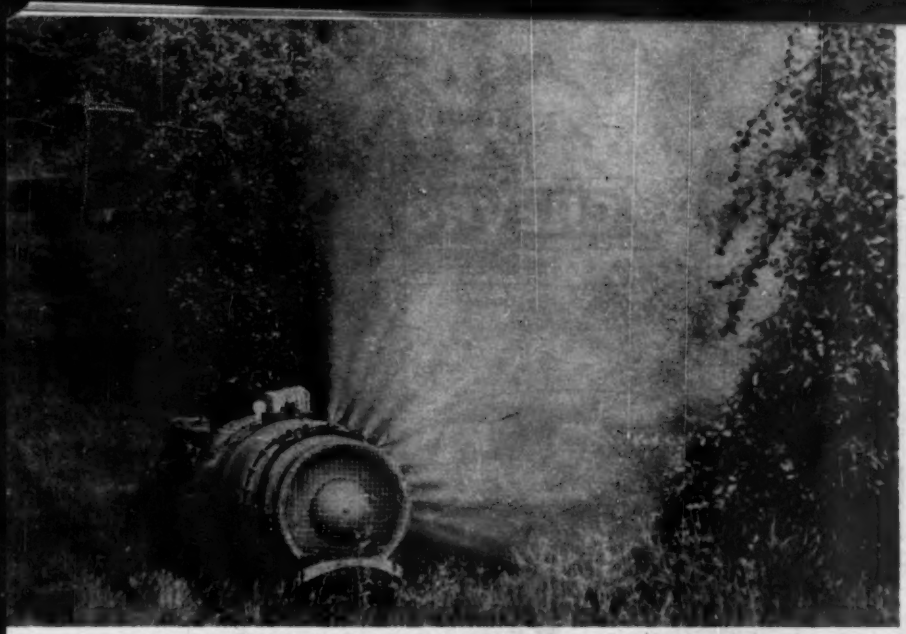
Cab that "breathes," All-steel cab construction • All-round visibility with rear-corner windows • New, heavier springs • Full-floating Hypoid rear axles on 3600 series and heavier duty models • Specially designed brakes • Hydrovac power brakes on 5000 and 6000 models • Ball-bearing steering • Wide base wheels.

Advance-Design Trucks

FIRST IN POPULARITY
FIRST IN USE
FAMOUS FOR THRIFT

It's a fact that Chevrolet trucks are preferred by more users than the next two makes combined! It's a fact that there are more Chevrolet trucks in use than any other make! That's because Chevrolet trucks have what truck users want—solid quality, power-packed performance and handling ease combined with lower operating and upkeep costs and the lowest list prices in the entire truck field! Visit your Chevrolet dealer soon and get the complete facts.

CHEVROLET MOTOR DIVISION, GENERAL MOTORS CORPORATION,
DETROIT 2, MICHIGAN



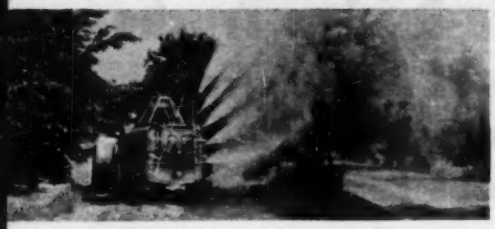
ANOTHER SEASON PROVES THE VALUE OF JOHN BEAN AUTOMATIC SPRAYING!

Better fruit at lower cost was produced in hundreds of orchards by John Bean automatic spraying in 1949. Labor costs were slashed, waste of material was eliminated with automatic spraying, so that growers had a better crop for better income — lower costs for more profits. For a quality crop at lowest cost make the John Bean way of automatic spraying your way.

PROOF THAT BEAN AUTOMATIC SPRAYING PAYS DIVIDENDS!

The Bull Orchards, Bailey, Michigan, operate one Speed Sprayer with refill unit, and one Royal 60 with a Bean Low Boy spray mast, in 250 acres of apples, peaches, plums and cherries. Mr. Bull got excellent control of mite and leaf roller because of thorough under-the-leaf coverage, and as a result, a top value crop.

John BEAN Automatic Spraying Produces Quality Crops and Cuts Spraying Costs



Surl Harding, Albion, is president of the New York State Cherry Growers Association. He has 30 foot trees of sweet cherries and this year harvested one of the cleanest crops which he has grown. With a John Bean Royal 35 and a Low Boy spray mast, one man now does all the spraying in 75 acres of fruit.

A clean premium crop with an absolute minimum of culls is the assured result of John Bean automatic spraying. Thorough coverage, that gets to the underside of the leaf, gives you full control of red mite, leaf roller, as well as codling moth and scab. A quality crop builds profits, so it pays to equip for automatic spraying with a John Bean Speed-Sprayer, or a John Bean high pressure sprayer with the proven Low-Boy spray mast.

SPRAYING COSTS GO DOWN

One man does the work of two or three, and does *it better* with John Bean automatic spraying. Spray material is evenly applied with no ragged coverage or waste caused by fatigue. In many cases automatic spraying makes growers independent of hired help, and *always* cuts costs. As a *plus*, faster spray time lets you get the material on the trees exactly when it's needed most. Don't let another season pass without the advantages of automatic spraying — the *proven* John Bean way.

INTERESTED IN MIST SPRAYING? — Then select the John Bean Speed Sprayer — backed by 9 years of proven performance in the orchards. The high volume of air output provides the dispersion necessary for effective control with either dilute or mist spraying. Special Speed-Mist nozzles provide the correct volume of spray output. When you mist spray with a Speed Sprayer you get the benefit of 9 years of field research. Don't take chances — choose a Speed Sprayer.

JOHN BEAN

LANSING 4, MICHIGAN — fmc — SAN JOSE, CALIFORNIA

DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION